# Learning and Experiential Outcomes of Face-to-Face Versus Online Communications Courses

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## Abstract

Higher education is rapidly trending toward the implementation of online (OL) courses and a blended facilitation style that incorporates both OL and face-to-face (FTF) classes. Though previous studies have explored the benefits and pitfalls of OL and blended learning formats from institutional, teacher, and student perspectives, scant research has examined learning outcomes for OL and FTF courses sharing identical content. This study used an explanatory mixed methods design—including pre- and post-test assessments, a questionnaire, and interviews—to explore similarities and differences in participant and teacher perceptions and outcomes (gain scores and final grades) of OL versus traditional FTF Communications courses, and to examine effects of students' age and gender on learning preference and performance. Data collection occurred over a 4-month period and involved 183 student and 2 professor participants. The study used an SPSS program for data analysis and created a Microsoft Excel document to record themes derived from the questionnaire and interviews. Quantitative findings suggest there are no significant differences in gain scores, final grades, or other learning outcomes when comparing OL and FTF versions of identical Communications courses; however, qualitative findings indicate differences between facilitation styles based on student and professor perception. The study sheds light on student and faculty perceptions of facilitation styles and suggests areas for potential improvements in FTF- and OL-facilitated courses. The study ultimately recommends that students and faculty should have options when it comes to preferred delivery of course material.

## Table of Contents

## List of Tables

**Table** **Page**

## List of Figures

**Figure** **Page**

# CHAPTER ONE: THE PROBLEM

This study examines whether or not the same learning and experiential outcomes are achieved in an online (OL) Communications course as are achieved through a traditional face-to-face (FTF) classroom Communications course. A Sloan Consortium survey of U.S. higher education (Allen & Seaman, 2008) suggests that OL course enrolments in the U.S. are growing faster than the "total higher education student population, with the most recent data demonstrating no signs of slowing" (p. 1). Given the impressive rise and adoption of OL and blended (BL) learning courses in higher education, the question of whether learning outcomes in FTF and OL courses should be given the same institutional and societal value as traditional FTF courses is important to address. The findings of this study will assist in addressing that question and help determine ways in which any differences that affect academic success can be addressed, better understood, and incorporated into future instructional strategies. By "academic success," I mean the overall course outcomes: the qualitative report of the experiences, the quality of the learning experience, as well as the resulting quantitative outcome scores and grades achieved.

## The Problem

The problem in the study is to determine whether or not there are outcome-based or experiential differences between FTF and OL versions of the same course and what, if any, impact these differences make on the delivery of the course by teachers and the learning outcomes of students taking the course. This study examines whether or not outcomes achieved from an OL class are of the same value as those achieved through taking the same course in a FTF class. Grades and gain scores between the OL and the

FTF version of the Communications course are compared in part to explore whether the courses were of equal value when considering institutional or professional requirements.

## Purpose of the Study

The purpose of the study is to determine ways in which any differences that affect student learning outcomes or effective course delivery can be addressed, better understood, and incorporated into future instructional strategies. These findings, together with insights from the literature on online teaching and learning, and adult education, will lead to implications for theory, practice, and further research.

## Research Questions

Research questions to be addressed are as follows:

1. What are the quantitative differences, if any, between the gain scores and outcomes (determined by the final grades) of a FTF versus an OL version of the same Communications course?
2. Are there significant differences associated with age and gender variables when examining the gain scores and outcomes of the FTF versus the OL version of the Communications course?
3. What are the qualitative differences, if any, between FTF and OL student experiences as reported through the evaluative comments in the participants' answers to the questionnaire?
4. What are the differences, if any, in the academic outcomes of the FTF and the OL courses that have implications for future course development?

## Rationale

There is a significant movement in the Colleges of Applied Arts and Technology

(CAAT) of Ontario toward BL which combines the elements of OL and FTF instruction, and OL courses in which facilitation is used as the primary instructional methodology. There is a general assumption made by college administrators that students in 2012—most of whom were born after 1982 and often referred to as *millennial learners* (Oblinger, 2003) or *digital natives*—want to learn using the information and communication technology with which they have grown up. The time and place flexibility of OL learning is marketable: education at your fingertips, and at your leisure. In fact, the Sloan Consortium report noted that "both chief academic officers and online teaching faculty said that flexibility in meeting the needs of students was the most important motivation for teaching online" (Allen & Seaman, p.2). Digital natives are reputed to be multi-taskers who demand and have access to information instantly (Brown, 2005); OL courses are appealing to these students who prefer to have access to course information on their own schedule, and do not have to wait for scheduled classes or to book an appointment with their professors regarding course information.

There is also an assumption of cost savings for the colleges. The more OL and BL courses offered by a college, the assumption goes, the greater the number of students that can be enrolled, unlike the limited physical spaces of the traditional classroom. For example, if a college were to offer one BL class that requires students to be in the classroom 50% of the time, and OL 50% of the time, then the college is able to utilize the 50% of the time the BL course is OL to fill the empty classroom with another BL course, thereby doubling the college's potential to reach learners and capitalize on enrolments.

Finally, there is a trend toward environmental awareness. There is an assumption that we can reduce a college's carbon footprint by reducing time spent inside a

classroom. For example, if the college offers a course OL, it eliminates the need to print out hundreds of papers per course; everything is made accessible to students OL. This example of environmental sensitivity, however, likely belongs in the *cost savings for the colleges* argument, since the cost of printing these hundreds of papers for one course then falls directly onto the students who often would like a hard copy of course materials, and are therefore required to print out materials for the course at their own expense. Also noteworthy is that the demand for electrical and other learning resources increases along with demand for eLearning course tools. The environmental implications of increased energy consumption are often overlooked.

## Importance of the Study

A large number of studies explore OL versus FTF education (Davis & Kilbourn, 2009; Nichols, Shaffer, & Shockey, 2003; Warren & Holloman Jr., 2005); however, there seem to be very few that look at a direct comparison of an OL and a FTF version of the identical course, and explore the results of the outcomes for these courses. Bernard et al.'s (2004) meta-analysis of 232 qualifying studies comparing OL and FTF teaching and learning concluded that more research was necessary due to mixed results—especially in the area of learning outcomes. Bernard et al. argue that pedagogical methods and the medium are two separate constructs that need to be examined. This research study looks at learning outcomes from a grade perspective and from instructor and student perceptions. This research could help add to what we know about the relevance of academic delivery systems, develop further understanding of students' and teachers' perceptions of OL versus FTF teaching and learning, identify student learning

preferences, and perhaps validate or caution against the rapid movement toward OL and BL formats.

As Hall and Smith (2011) observe, "Globalization is bringing about a radical *rethink* regarding the content and delivery" of education today (p. 279). However, institutions of higher education need to be careful not to mix the medium with the message. Education has a "history of taking devices not originally intended for educational purposes, and attempting to appropriate them for educational gain" (Melhuish & Falloon, 2010, p. 2; see also Hemmi, Bayne, & Land, 2009).

There is currently a trend to use personal devices such as smartphones and tablets in the classroom; social media sites such as Facebook, YouTube, and Twitter; and OL virtual environments such as Second Life for educational purposes. Changes to delivery methods in higher education are not necessarily innovative improvements. Individual programs must evaluate the best method of delivery for any course offering. Some courses are better suited to an OL delivery, and other courses should not be offered OL for pedagogical reasons.

There are potential benefits to the academic community that would justify the involvement of participants in this study. What if the learning outcomes achieved through taking the course OL are identical to those learning outcomes as measured by grades achieved by taking the same course in a FTF classroom? What effect might this have on graduation levels (as could be studied later based on the findings of the current research)? Moreover, what if other factors or conditions such as participant experience or teacher ability are just as important as the medium used to determine learning outcomes in FTF and OL courses? Whatever the outcome of the study, the information gained may be

beneficial to future course development, and this pilot study may encourage further research on the subject.

## Scope and Limitations

This study was conducted at the postsecondary level, at a community college located in south-western Ontario, Canada. The teachers who were selected for the study are full-time faculty members, proficient at teaching both in the classroom and OL. The proposed target group was approximately 400 male and female students required to take the Communications course, of whom 183 participated in the study. There were no required demographic characteristics other than all participants were students required to take this Communications course at the college. Students varied in terms of gender and program of study, and they were between the ages of 17 and 48 at the time of this research study. There were no language or communication barriers, since all students were assessed for language and communication aptitude prior to entering the course. All appropriate ethics clearances and consents were obtained from the University, the College, and the participants. The Communications courses used in the study were open to all students required to take the Communications course in the Fall 2010 semester. All students were given the option of taking this course in-class or OL. This self-selection may be a limitation since those students with skill sets specific to one or the other medium (OL vs. FTF) may affect the results. The researcher did not have a relationship to the target groups other than to collect data for the purpose of the project. There were no incentives offered to subjects for participating in the research since nothing was altered from the students' regular school routine.

The Learning Management System (LMS) used for the OL delivery of the course

(Desire2Learn) is the learning management system that all students enrolled in BL, OL, and FTF courses at this college are required to use.

The findings from this study are not intended to be generalized, but may be used as a general guideline and as an indicator of future research direction or needs.

## Outline of Chapters

Chapter 2 discusses the literature relevant to OL versus FTF teaching and learning. It explores the historical emergence, significance, and impact of OL learning on higher education generally and on student learning specifically. The chapter presents relevant literature on the conceptual and perceived differences between FTF and OL learning from the perspectives of the students, the facilitators, and the institutions. Chapter 3 presents and discusses the research methodology, participants, and procedures followed for this study. The study used a quantitative quasi-experimental design approach and gathered qualitative information using a participant questionnaire and open-ended interviews for the instructors of the courses. The participants in this study comprised two full-time faculty members teaching the same community college level Communications course (but with one course offered OL and one FTF) and 183 students taking the Communications course either OL or in traditional FTF classroom mode. As well as the data analysis methods and procedures used, the chapter presents limitations and credibility considerations.

Chapter 4 presents the quantitative findings of the study regarding the similarities and differences reflected in the outcomes of the Communications classes taught OL versus in a traditional FTF classroom environment.

Chapter 5 discusses the qualitative findings in response to the research

questionnaire given to the student participants, and from the transcribed interview of the professors in the research study.

Chapter 6 presents the conclusions and implications for practice from the study. The chapter synthesizes the core findings from the study and offers additional considerations and recommendations for further research.

# CHAPTER TWO: REVIEW OF RELATED LITERATURE

This chapter examines the research literature comparing OL and FTF learning outcomes from participant and institutional perspectives, explores the historical emergence of OL learning in higher education, and examines the philosophical, conceptual, and pedagogical similarities and differences between FTF and OL teaching and learning. Qualitative research perspectives from teachers, students, and institutional administrators on OL versus FTF teaching and learning are also examined in the research literature.

## Student Perspective

In 2012, many students in higher education are characterized as "Net Gen" students, or "millennial learners." The characteristics of millennial learners, as described by Brown (2005), are that they are ethnically diverse, experimental multi-taskers with a heavy reliance on network access and a leaning toward visual learning preferences. To be considered as true millennial learners in higher education, students need to use a variety of digital devices on a daily basis (Pedró, 2009) and be born after 1982. Students born prior to 1982 may be considered "digital immigrants," defined as those who are "not born into the digital world but have, at some point… become fascinated by and adopted many or most aspects of the new technology" (Prensky, 2001, pp. 1-2).

These millennial learner characteristics seem to fit nicely with OL learning activities, while Brown (2005) associates other millennial learner preferences such as a desire for interactive learning environments and group learning with a traditional FTF classroom environment.

With regard to the student perspective, a variety of issues from the literature on

OL teaching and learning will now be addressed ranging from issues of time and place flexibility, social context, role reversal, plagiarism, and self-direction to those of instant education.

**Time and Place Flexibility**

Students cite flexibility and convenience as the main benefits of taking an OL course. The time and place flexibility of OL learning is most beneficial to those students who have other obligations—the "second-career" or "mature" students that may have to balance a job and/or a family along with their education; those students who value their coursework and time, and who are perhaps more self-directed in terms of what needs to be achieved in their classes and in their program of study. This is not typically the demographic sought by institutions of higher learning when considering online courses.

Students of OL classes who attend traditional colleges and universities enjoy the time and place flexibility of OL learning; however, the perceived time and space freedom of OL courses may be paradoxical for students since they are never entirely away from their classes thanks to popular hand-held devices like smartphones. Instructors may contact students regarding course content via e-mail, which would instantly reach the students who have their school e-mail directed to their smartphones. Students may spend more time thinking about their OL courses than they would their regularly scheduled FTF courses.

**Social Context**

In addition to time and place flexibility, the research literature stresses the importance of social considerations. It is imperative that institutions do not downgrade the importance of the social aspects of college and university life. Students will not

fondly look back upon their years of higher education remembering all the time they spent on the computer. What is most valued by students about the college and university experience is the relationships they make during this time. Friendships are developed and networking begins through FTF contact in these important formative years. In the *Handbook of Online Learning*, Rudestam and Schoenholtz-Read (2010) caution "What has the potential for assimilating and joining people together on any number of topics and experiences can easily lead to feelings of loneliness and isolation" (p.7) when considering the OL learning experience.

When examining OL course feedback from millennial learners, it is evident that they "miss" the FTF interaction with the other students and the instructor. There is an assumption that because these students may be more familiar with technology, OL would be their preferred method of study:

> Students value technology insofar as it provides more convenience and lets them benefit from productivity gains in their academic or course work. But their preferences stay with face-to-face teaching: they expect technology to supplement this approach, not change it radically. (Pedró, 2009, p. 17)

Young adult students in particular need to socialize FTF. This classroom social interaction is an important aspect of their young educational life. Social learning theory posits that people learn best by interacting with others in social settings (Merriam & Caffarella, 1999). There is criticism of the millennial generation that they are *different* socially than previous generations, often preferring texting over talking, e-mailing over traditional FTF interaction, and generally more technologically skilled than socially skilled. However, these millennial students are really not that different from any other

group of students from the past; they still crave FTF social interaction. Television, tele-conferencing, and videos have been used as educational tools for decades, but have not replaced FTF classroom instruction although each technology has found a niche within the education system of its day. There seems to be a perception of potential for OL education to render FTF classroom education obsolete. Generations ago, the same perception was evident when televisions were brought into the classrooms as educative tools but many researchers such as Cavanaugh (2001), examining the effectiveness of distance technologies for education, argue that technologies can and should supplement and support traditional forms of course delivery and learning but not replace them. Students will always need a venue for FTF socialization throughout their education.

**Role Reversal**

Another issue emerging from an examination of the literature on OL teaching and learning is that of "role-reversal" between student and instructor. In many OL and BL courses offered in institutions of higher education, it is increasingly popular to have students create course modules and moderate associated discussion sessions of their OL classmates as a requirement of the course. Students may resent this type of role reversal, and fail to see the value in the OL course when they are posting the content.

Online learning requires substantial discipline in terms of time management and effort on the part of the students to be self-directed learners, and indeed, much of the course content needs to be self-taught. This is most common in OL courses since, generally, students are required to actively read course content OL, instead of passively listen to it in a lecture hall. This may be perceived as worse than attending that 8:00 a.m. FTF class they were trying to avoid by taking the OL version of the course.

When it comes to eLearning,

> Students are beginning to assert that it is not acceptable to be deprived of interaction with their professor, that the course content is irrelevant, the tasks are trivial, outcomes are meaningless and of little value, and expectations and workload are unreasonable. Student dissatisfaction has become a serious problem, and the reputation and recruitment of institutions are at risk. (Garrison & Vaughan, 2008, p. 153)

**Plagiarism**

As well as role reversal, the literature on OL teaching and learning also considers the plagiarism issue. Student plagiarism ranges from incorrectly paraphrasing written material to submitting an entire paper taken from another source, and claiming it as the student's own original work. Many students of higher education tend to think plagiarism is "no big deal" and that copying any text from the internet is "fair game" (Park, 2003). Students' plagiarism may also be viewed as a social construct when considering international versus domestic students' perspectives on and engagement in cheating. Some international students have argued that they *don't have the words* to properly express their ideas, so they borrow from a reputable text without properly referencing any secondary sources.

Online students need to be particularly careful to avoid plagiarism since "the internet provides easy information fast, the temptation to click 'copy/paste'... without attribution is great" (McNeely, 2005, p. 4.6).

**Self-Direction**

While plagiarism is an important issue, the need for self-direction is stressed in

the research on OL teaching and learning. The most common criticism of OL learning from millennial-learner students is that it is too easy to forget about the OL course work: "out of sight, out of mind."

Students taking OL courses need to be self-directed learners. Being brought up with computer technology does not help a student to be self-directed. Online teachers' experiences with OL learners illustrate that it is generally the "second career" students (who are often married and have young children) who do the best in these types of courses. These "digital immigrants"—described by Prensky (2001) as those "not born into the digital world but have, at some point... become fascinated by and adopted many or most aspects of the new technology" (pp. 1-2)—have learned how to better manage their time and plan accordingly for their OL class(es). These students may be best suited for an OL learning environment because of the additional constraints on their time.

Students who are also parents, and possibly employees, are forced to do their coursework for their classes when their time is not otherwise occupied. Conversely, OL students who are fresh out of high school often do not yet know how to manage their time, having to balance course work, a social life, and potentially sports and part-time employment. Often for these first-year college students, it is their first time away from home—and away from their parents' prodding to do their homework and, if taking courses OL, away from even fellow students and their teachers in the physical sense. This apparent classroom disjointedness makes it mandatory that the student be responsible for his or her own learning schedule or OL courses need to be designed and supported to cope with such issues. Online students need to be self-directed learners. With so many other novel things happening for them in their lives at this point in their educational

career, many students end up having great difficulty managing the OL coursework and assignment deadlines.

**Instant Education**

In addition to self-direction, another issue that emerges in the research literature is the idea of instant education. The millennial generation has been brought up with the technological equivalent of instant gratification. They equate technology with expediency; "there is zero tolerance for delay" (Oblinger, 2003, p. 40). Instant messaging, instant information, instant photos—it is amazing that with today's technology, people are able to take pictures with their smartphones and are able to share them with friends within a few seconds. Today's students can look up an address, research an assignment, and e-mail their parents at virtually the same time.

Unfortunately, there is nothing instant about education, and this includes OL coursework. Some students become frustrated when all information and all the answers to their questions are not readily available at the click of a mouse. McNeely (2005) states that millennial learners "learn by doing, not by reading the instruction manual or listening to lectures" (p. 4.3). Unfortunately, *reading* course information posted OL is mandatory for any OL course. Reading information OL is more difficult than reading from a textbook. It is harder on the eyes to read long passages on a computer screen versus reading a chapter in a textbook, and a textbook will never *crash* in the middle of your research. A student needs to make a conscious effort to create his or her own course notes or highlight important course information in an OL course. Anderson (2008) gives the following examples of suggested learning activities to enhance OL learning:

Learners can conduct research on the internet or link to online information and

> libraries to acquire further information. Having learners prepare a learning journal will allow them to reflect on what they have learned and provide the information with personal meaning. Appropriate application exercises should be embedded throughout the online lesson to establish the relevance of the materials. Practice activities with feedback, should be included to allow learners to monitor how they are performing, so that they can adjust their learning method if necessary. To promote higher-level processing and bring closure to the lesson, a summary should be provided, or learners should be required to generate a lesson summary. Opportunities should be provided for learners to transfer what they learned to real-life applications, so that they can be creative and go beyond what was presented in the online lesson. (p. 38)

While the above learning activities involve *learning by doing*, which millennial students might appreciate, the activities certainly cannot be considered *instant*.

**Considerations**

The student perspective issues from the research literature already addressed on OL teaching and learning require still more research and attention. R.M. Wallace's 2003 article entitled "Online Learning in Higher Education: A Review of Research on Interactions Among Teachers and Students" supports the conclusions of Hara and Kling (2000) that more research from the students' perspective is needed. Twelve years later, there is still very limited research from the students' perspective. Instead, "many researchers bring an optimistic, romantic view of technology that may dampen their ability to look at hard questions and apply rigorous research methods. Much of the research... has been advocacy and theorizing about future possibilities" (Wallace, 2003, p. 14).

In order to ensure the best possible education for students, it is imperative that the institutions recognize what is most valuable to students in terms of their learning preferences. Online learning is not for everyone, and may not be the best medium for teaching, for example, millennial learners. These 17-20 year-old millennial learners may not have yet achieved the self-directedness that is needed to succeed in an OL course environment. The assumption must not be made that because these particular learners have been brought up with computer technology, that they are predisposed to learning via OL or BL classes.

Mezirow (2000) states that adult learning programs should be designed "to help adults realize their potential for becoming more liberated, socially responsible, and autonomous learners" (p. 30). One might think he was speaking directly about OL learning. Online learning is a liberated style of learning which possesses considerable flexibility and convenience; it is often deemed socially responsible in that OL learning could be viewed as more environmentally friendly than traditional classroom education, by using less paper and other traditional classroom resources; finally, the OL student must be autonomous in nature in order to succeed in this technological learning environment.

It follows that issues arising from the research literature on OL teaching and learning from the student perspective must also include a literature examination of teacher and institutional perspectives.

## Teacher Perspective

Today's students have the technological advantage to "turn almost any space outside the classroom into an *informal* learning space. Similar to the traditional

classroom, educators have an important opportunity to rethink and redesign these non-classroom spaces to support, encourage, and extend students' learning environment" (Brown, 2005).

With regard to the teacher perspective, issues from the literature on OL teaching and learning include the despatialization of work, the virtual work space, freedom of time and place, academic ownership and intellectual property, role reversal and generational shift, plagiarism from the instructor's perspective, learning preferences, and effective teaching methods.

**Despatialization of Work**

The literature on OL teaching and learning suggests that the resultant work despatialization has significant effects. Online teaching and learning may make the busy lives of both instructors and students even busier. Research indicates that facilitating an OL course may be more time-consuming than facilitating a FTF course (Kraglund-Gauthier, Chareka, Murray Orr, & Foran, 2010; Mills, Yanes, & Casebeer, 2009; Wallace, 2003). If an instructor typically facilitates six 3-hour FTF lectures per week, would it be fair to instead have the instructor facilitate six OL courses? To the institution, the OL course facilitation may not appear to be as much work as a FTF lecture; however, OL and FTF course facilitation are vastly different, and professor participants in this study who have experience in both OL and FTF facilitation methods state that, depending on the course, facilitating an OL course can be "10 times" more time consuming than facilitating a FTF class.

The social despatialization of work has contributed greatly toward an interconnected global economy which is positive; however, this same globalization has

created a "political economy of insecurity, uncertainty and loss of boundaries" (Beck, 2000, p. 73). This is evident in institutions of higher learning where instructors are compensated for *teachable hours* and, if the instructor is fortunate to be employed in a full-time position, *prep* time. It is difficult to measure exactly how much time is spent by instructors on their work in OL courses. The nature of the OL environment enables an expectation of instant access to resources, including that of the instructors themselves, for OL students. Students of OL learning, by necessity, e-mail their instructors with their questions, and expect a quick response. As a result, many OL instructors are *wired* 24 hours a day, 7 days a week, and if they choose to respect their own time *away* from work, it often leads to stress and more work the next time the OL instructor logs into the course or checks his or her work e-mail. In "The Frontier of Web-Based Instruction," Mitchell, DiPetta, and Kerr (2001) discuss this "'24/7' phenomenon ... whereby the learning environment, the instructor, and the students are available to any individual 24 hours a day 7 days a week" (p.117). Mitchell et al. assert that though the "asynchronicity" of OL learning has its advantages: "it brings with it an enormous workload and an overwhelming amount of text" (p. 117).

Instructors will need to adapt to the new learning environments, keeping in mind that the educational principles are the same whether they are teaching in a physical or a virtual classroom. Some instructors may mourn the loss of the traditional classroom when faced with teaching an OL course. There may be a sense of redundancy on the part of the instructors since all course content is posted for the students in an OL class; however, the quality of delivery in an OL class is perhaps even more important than in a FTF classroom environment. Even exceptional instructors and subject-matter experts

comfortable with teaching in FTF classrooms will not necessarily be star performers in a virtual classroom (Longobardi, 2003). It is not enough to simply post content, such as PowerPoints and classroom notes used in a FTF class, into an OL course. Wagner, Vanenhoven, and Bronson (2010) offer suggestions on how to "1) make the course flow smoothly, 2) make the course an effective teaching venue, 3) make the 'customers' happy, and 4) make life easier for both the students and the instructors" (para. 5). Wagner et al. confess that "online instructors in our college fill all roles, including instructional designer, instructional technologist, and content expert" (para. 3), and stress the importance of "the need to train and integrate new faculty into the program in a way that maintains the quality of our courses" (para. 5). Naturally, some professors may be hesitant to jump into an OL learning environment; after all, "educational technology expands more rapidly than anything else that we have encountered and can morph into educational forms that we have not anticipated" (Moskal, Dziuban, Upchurch, Hartman, & Truman, 2006, p. 29). In terms of technology and education, seasoned instructors know that what "seems new and innovative one day becomes old and obsolete the next day" (Rudestam & Schoenholtz-Read, 2010, p. 7).

**Virtual Work Space**

This work despatialization is reflected in office space issues. If an instructor is now teaching exclusively OL courses, does he or she require a designated office space on site in the institution? If instructors are teaching more BL-format courses, it may be assumed by the institutions that they will not spend the same amount of time at the institution and perhaps these instructors can share a workspace with another instructor of BL or OL facilitated courses.

The reality is that though the instructors may be able to work from home on many of their OL and BL courses, they may prefer to keep their work life and home life completely separate. Keeping work "at work" is increasingly difficult for many employees in today's society, and this may be particularly difficult for those teaching OL and BL-format courses. The lines have become increasingly blurred between work life and home life for instructors and students. Organization theorists had predicted that the increasing efficiencies, thanks to technology in the workplace, would lead to a shorter working week. Ironically, what has actually happened is "a longer working week for some and no working week for others" (Fineman, Sims, & Gabriel, 2005, p. 233).

Most people have a home computer, and many people carry technological devices such as smartphones and the like that allow them to keep in contact with both their personal and professional lives. Unfortunately, this convenience means that "you are never safely away from your workplace" (Fineman et al., 2005, p. 233).

**Freedom of Time and Place**

Office space issues are closely related to the degree of availability instructors face with OL and BL courses. Instructors of OL courses in higher education lament that today's students of OL and BL courses demand a virtually instant response to their e-mailed inquiries. In this study, participant professors claimed students would be irritated when a question e-mailed at 8:00 p.m. on a Friday night remained unanswered by that Sunday morning. Many instructors, as a result, carry hand-held devices which enable them to answer their students' questions at any given time. The explanation given by these instructors is that answering students' e-mailed questions on traditionally "off" hours, prevents an overwhelming amount of e-mails that require *immediate* attention on

Monday morning. A decade ago, it would seem ridiculous to have instructors carry pagers with them, answering students' pages at all hours; why does this seem to be a requirement in today's educational setting?

Instructors in the field of OL teaching and learning need to be especially cognizant of how much time they spend in the virtual workplace compared with the amount of time they devote to their personal and family lives. The lines between *home* and *work* are rapidly disappearing with the rise in popularity of the virtual organization/workplace.

Instructors of OL classes have greater flexibility in terms of their work schedules, but work/life balance becomes more of a crucial issue than ever before. Some instructors of OL courses try to maintain boundaries between home and work by refusing to bring their OL work home on nights and weekends. Further to this, some other instructors set OL office hours for their eLearning students and offer a specific date and timeframe when the instructor will be available OL to answer e-mails and discussion questions. This can help negate the time and place freedom of OL learning for students, especially if these students require the instructor's assistance outside of traditional classroom hours.

**Issues of Academic Ownership and Intellectual Property**

Out of the research literature emerges instructor concerns over academic ownership and intellectual property. The rapid movement toward BL and OL-facilitated courses necessitates instructors' personal resources be posted OL. Once these resources—including PowerPoints, lecture notes, pod-casts, and tests—are uploaded into an OL course, the instructor may lose proprietary ownership. Generally, in institutions of higher learning, it can be found in the collective agreement that whatever materials an

instructor creates for a class taught at the institution become the intellectual property of that institution. Many full-time permanent instructors are hesitant to post any of their course information for this reason. When part-time instructors are now hired, it is expected that they will post the course information that they have created to their BL and OL-facilitated courses. Most institutions *own* all materials (academic property) physically produced on site by instructors, and certainly if produced OL for a course taught through the institution. The course work an instructor creates while at work generally becomes the property of the educational institution. And, what about the work the instructor does on his/her own time at home? The boundaries of ownership become increasingly blurred when we examine work done OL. Does any and all work done by an instructor become the property of the institution regardless of where it was written, so long as the instructor is employed by the institution? Does this apply to all faculties regardless of status? What of the sessional instructor who works at several different institutions? To whom does his/her professional work belong?

Who owns what? Should facilitators/course creators in higher education sacrifice personal career and financial security for the greater good of the students? An unsustainable academic climate is created, filled with insecurity and frustration.

**Role Reversal and Generational Shift**

When it comes to facilitating OL or BL courses, some instructors may fear that their students might know more than they do about the educational technology platform, and they may be right. Instructors, expected to be masters of their course content, suddenly become students when they are required to facilitate their traditionally FTF classes OL or in a BL learning format. In many disciplines, if employees are not *in* with

the new technology, they may be *out* in terms of how they are viewed by their students and the institution. There seems to be an expectation by institutions of higher education that their instructors be competent facilitators and expert in OL pedagogy, while many seasoned instructors have never used educational technology. Thus, there is often a reversal of generational roles (Gephart, 2002) evident whereby new instructors may be required to mentor those tenured instructors who are inexperienced in technagogy.

**Plagiarism From the Instructors' Perspective**

Identified as an issue from the research literature on student perspectives, plagiarism is also an instructor concern. From the instructors' perspective, plagiarism is not a new matter. Though the use of internet technology may make it easier for students to *copy and paste* information into their papers, that same technology makes it easier for instructors to detect such plagiarism. Instructors may "google" sections of a student's submission to check for authenticity, or may put the student's paper through a plagiarism detection program (such as Turnitin) to obtain an originality report. Some students and instructors take issue with plagiarism detection programs because once a paper is uploaded into one of these programs, it becomes the irretrievable property of the program. Plagiarism becomes more of an issue in an exclusively OL course since instructors have no easy way to determine whether students are submitting their own work, or if the students' friends or parents or some other party is completing their OL tests and assignments for them.

Plagiarism may become more of an issue for instructors when they are required to post their course materials for a BL or OL course. Instructors may have "borrowed" items such as assignments or PowerPoints from other sources which they have not properly referenced or obtained permissions. The transparency of OL and BL courses, revered by

institutions and students, may be worrisome for some instructors who do not understand copyright law. As a result, they live in fear of professional embarrassment or even worse consequences.

**Learning Preferences**

Research on instructor perspectives indicate the need to consider student learning preferences. It is important to consider the individual learning preferences of the students in any class whether it be facilitated in a traditional classroom, BL, or OL. An effective teacher takes into consideration that a percentage of his or her students are visual, auditory, or tactile learners (Sarasin, 1998), or that the students have a combination of two or three of these learning styles. It is possible to employ various media in a virtual classroom in order to appeal to all the different learning preferences. The best physical classroom teachings incorporate various means of delivery in order to satisfy the different student learning preferences. For instance, to engage a visual learner, the teacher may use various visual aids to show the learners the material they need to know, whereas for an auditory learner, the teacher needs to find ways to tell his or her learners the necessary information. For tactile learners, the teacher needs to directly involve the students in the learning in a hands-on way. In the best OL courses, the teacher needs to incorporate all of these learning preferences. "Because students have unique learning styles, online courses should include activities and assessments that are varied to meet the learning styles of all students" (National Education Association [NEA], 2006, p.7). Likewise, Anderson (2008) suggests that "online learning should include a variety of learning activities to help students achieve the lesson's learning outcome and to cater for their individual needs" (p. 38). This is a manageable task thanks to multimedia technology.

It is difficult to read from a computer screen for any extended period of time. When creating an OL course, the instructor should consider adding several links to visual and auditory mini-lectures, PowerPoint presentations, and interesting websites that complement and enhance the content of the course. In a FTF classroom, the teacher may invite guest speakers, employ interactive lecturing techniques, and make sure to keep the material fresh and relevant to help students remain engaged in the material being taught. It is possible to use the same techniques in an OL classroom. It may, in fact, be easier in a virtual classroom to update and keep material fresh and relevant to the course. For instructors skilled in integrating technology into their courses, the internet provides the virtual classroom with up-to-the-minute fresh ideas and topics that may be of interest to the ever-evolving student body.

**Effective Teaching Methods**

An examination of the literature on OL teaching and learning shows the best OL courses mimic the best practices of the traditional FTF classes. While technology is the vehicle for OL courses, we are mindful that this vehicle is driven by good pedagogy (Henry & Meadows, 2009).

Many successful teachers of OL courses are also successful teachers in FTF classrooms. If the instructor is bored with the material, it does not matter whether he or she is teaching in a virtual or a traditional classroom, the students will also be bored. The best teachers are enthusiastic in presentation and practice of the material they teach. The teacher remains the constant human element that OL courses need in order to prosper. “A clear and consistent teacher presence is central to successful online course delivery. Teachers can facilitate student learning by working with online students to stay on task

and organize their time appropriately to assure success in a virtual environment" (NEA, 2006, p.6).

A good teacher can get the students to collaborate on thought-provoking projects, encourage critical thinking, and promote deeper learning in the classroom whether that classroom is in an institution or out in cyberspace. What the teacher cannot do for the OL student is to be physically present at a specific time to help the learner along with his or her studies. Perhaps a consideration to try to alleviate this detriment is to have reminder e-mails sent regularly to students so they know to keep up with the OL course material.

As DiPetta, Novak, and Marini (2002) note, "Technology will revolutionize teaching only to the degree that it can be used as a tool for communicating and deepening human experience," and to that end, "the road to better schools may be paved with technology, but it will be planned and built by teachers" (p. 24).

**Professional Development**

The research also indicates the importance of instructor OL professional development. Many articles have been written regarding the trend toward OL education and training. Petrilli (2008) illustrates a perplexing and ironic problem that though "teachers could be receiving targeted training in the comfort of their own homes, on their own schedule, and without the hassle or frustration of face-to-face PD" (p. 85), they still prefer conventional professional development experiences to that of OL training. With such a trend toward OL education, teachers need to embrace the opportunity to *learn* as well as *teach* OL. Petrilli claims that "eventually the resistance to OL professional development will crumble," and criticizes "How long that will take will be a decent indicator of just how calcified our education system has become" (p. 85).

## Institutional Perspective

"Any teacher that can be replaced by a computer should be" (Thornburg, 1996). In addition to the research on OL teaching and learning issues for students and teachers, the institutional perspective is emerging as a determining factor in the successful implementation of OL education. Factors such as cost savings, efficacy, academic reputation, plagiarism, and part-time instructors are all important.

> University administrators attribute the growth of their OL programs to student demand. Online programs increase access to education for students who are nontraditional and are unable to attend classroom-based environments. This fulfills a significant mission for many institutions. Online programs have also grown to meet the need for increased continuing and professional education, increased retention and degree completion, and accessibility for new students outside their catchment areas. (Allen & Seaman, 2007, p. 7)

Most colleges and universities are pushing to offer more of their courses OL to try and keep up with these technological times. But, if not properly implemented, these OL courses could be detrimental to the reputation of the institution.

> An effective online education program demands that administrators and policymakers make wise decisions about resource allocation. Just as a traditional classroom teacher should have access to appropriate tools and resources, an online teacher needs certain types of support to succeed. Educators are being challenged to instruct in a very new environment. This environment requires a high level of technological and administrative support and strong guidance on pedagogical practice. Teachers' and

> students' success in online learning environments rests heavily on the support system provided. (NEA, 2006, p. 7)

Online learning is not for everyone, and may not be the best medium for teaching millennial learners, those students born in or after 1982 (Oblinger, 2003). This demographic is the current target audience for e-learning. Institutions of higher education are making a questionable assumption that since this particular generation has been brought up with technology, they must learn best through technological means. Gardner (2000) cautions that "technologies hold tremendous promise, but they must be seen as a means rather than ends" (pp. 39-40). The current target audience for most colleges—the 17-20 year-old millennial learners (Oblinger, 2003)—may not possess the self-directedness needed in order to succeed in an OL learning environment. Though this particular generation has been brought up with technology, they may not all learn best through technological means.

It is important that postsecondary institutions realize that if their students wished to enroll in an OL college or university, they could easily have done so. Students attending a traditionally FTF college or university are there because, in part, they value the FTF experience and enjoy attending classes, meeting friends and forming relationships with their fellow students and instructors. If these students wanted OL education, they could have applied to an OL institution.

There have been instances where OL courses have been given to students because no FTF course would fit into their timetables. In some of these instances, this overloads the students, and in other instances, particularly where the student has no prior experience with computers or OL classes, it overwhelms them. Students should always have options,

and student-centered institutions of higher education should offer a variety of learning options for these students.

**Cost Savings for the Institution**

When considering the move toward BL and entirely OL-facilitated courses, cost-savings may be the deciding factor. The more OL and BL-learning courses offered by an institution, the more students they can service, and the more money they can make. For example, if an institution were to offer one BL-learning class that requires students to be in the classroom 50% of the time, and OL 50% of the time, then the college is able to use the 50% of the time the BL course is OL to fill the empty classroom with another BL-learning course, thereby doubling its potential profit. Virtual class space seems exceedingly cost efficient, but is it really? Virtual space may not always be a cost-saving solution to an institution's physical space needs.

Instructors' office space is also a consideration. If an instructor is now teaching exclusively OL, does he or she require a designated office space on site? If instructors are teaching more BL-format courses, institutions may assume that instructors will not spend the same amount of time at the institution and, as a result, make them share a workspace with another instructor of BL or OL facilitated courses. Collective agreements and other faculty/institution protocols and agreements may impact this.

Environmental awareness is an increasingly relevant issue in today's society, and there is an assumption that we can reduce an institution's carbon footprint by reducing time spent inside a classroom. For example, if a school offers a course OL, it eliminates the need to print hundreds of papers per course; everything is made accessible to students OL. This, however, is merely a cost-savings strategy for the institution; it has nothing to

do with institutional environmental sensitivity because ultimately the responsibility to print course-related materials filters down to the students. Down-loading does not address environmental issues.

Converting FTF courses to OL and BL-facilitated courses should not be seen "as a cost savings approach to education since it requires a large investment in infrastructure and support" (Rudestam & Schoenholtz-Read, 2010, p. 7).

**Efficacy of Online Education**

While cost-saving is an important consideration, research on OL teaching and learning also stresses the efficacy issue. In "Evolving Technologies," Mason and Rennie (2010) explain that "Educational hype has a long and resilient history of jumping on the latest technology as the means of making education better, cheaper, more available, or more responsive" ( p. 101). They remind us that "Television and then videoconferencing were going to render most ordinary lecturers redundant, as every student would have easy access to outstanding lecturers, with resulting cost savings" (p.101). Although these trends did not "render lecturers redundant," technological trends in education should not be totally ignored by postsecondary institutions. What the institutions should be mindful of is that educative technologies are tools. Institutions cannot assume these tools will improve education, reduce costs, or widen participation in higher education (Mason & Rennie, 2010, pp. 101-102), but these tools could be beneficial in many courses when careful consideration is given to course design.

According to Garrison and Vaughan (2008), "Convenience and efficiencies are acceptable goals [of the institution] as long as there are commensurate increases in the quality of the learning experience" (p. 153); however, without "investment in the

exploration and redesign of teaching and learning that integrates the best of face-to-face and online learning, we put higher education institutions at a competitive disadvantage" (p. 153).

Most quantitative research studies that compare OL versus FTF courses find no significant differences in the outcomes of the courses (Davis & Kilbourn, 2009; Nichols et al., 2003; Warren & Holloman Jr., 2005). Qualitative studies illustrate differences in the perception of these courses, but the findings of the research cannot be generalized to reflect any significant number of FTF or OL-facilitated courses. There is no conclusive evidence that one style of facilitation is superior to the other.

**Consideration for Academic Reputation**

Concern about OL teaching and learning can touch on an institution's academic reputation. There are common concerns circling OL education in terms of plagiarism, accountability, academic value, and the perception and reputation of the institutions of higher education that offer OL diplomas and degrees. When so many OL institutions of higher education are closing their virtual doors due to questionable practices or insufficient academic standards (e.g., Lansbridge University, Meritus University, Warren National University), why are FTF institutions still rushing to get a piece of this virtual pie?

There is a growing list of known diploma mills, accessible via numerous websites (which are ironically littered with advertisements for other OL colleges and universities) where students are able to obtain a diploma or degree (even a PhD!) for a price. This price may be a straightforward dollar amount, or it may require the student to "attend" some virtual classes, where often the student will receive credit for varying degrees of "life experience," before receiving his/her diploma or degree. Chester Ludlow, for

example, received his MBA degree OL in June of 2009 from Rochville University—Chester is a Pug dog (GetEducated Reporting Team, 2010).

**Plagiarism From the Institutions' Perspective**

Of concern to students and teachers, the research indicates plagiarism can be an institutional problem. As well as being the problem that won't go away (Paldy, 1996), plagiarism is a problem that is growing bigger. Student cheating in general, and plagiarism in particular, are becoming more common and more widespread, encouraging Alschuler and Blimling (1995) to speak of "epidemic cheating" (as cited in Park, 2003, p. 471).

The temptation to copy and paste their assignment data is increasingly attractive to students, especially students in OL courses. This has prompted institutions of higher education to employ plagiarism detection technology such as Turnitin. Students may be required to submit their papers to the Turnitin program to verify the originality of the students' work. There are, of course, ways to fool this system, and instructors need to remain vigilant in order to detect plagiarism in students' work.

There has been little, if any, research to explore the occurrences of plagiarism in the postings of the institutional instructors. Some instructors, knowingly or unknowingly, use assignments "borrowed" from other institutions, or circulate current articles from various publications to their FTF classes. What if these instructors were to post this so-called borrowed information to their OL courses? How does the institution account for this?

Park (2003) describes plagiarism as a "legal minefield" (p. 475) for institutions, and quotes Brandt (2002) who illustrates how "copyright abuse and plagiarism are like two sides of a permission coin: on the one side, people take without asking, and on the other side, people take without telling" (p. 475).

When a reputable FTF college or university offers an OL course, what quality controls are in place? How does the institution account for the academic value of an OL course? If a student, enrolled in a reputable FTF institution takes all of his/her courses OL from the institution, without setting foot into the physical building, does this student's degree hold the same value as a degree obtained via a traditional classroom setting?

**The Trend Toward Part-Time Instructors**

Another challenge to the institution and OL teaching and learning is the trend toward part-time instructors. Maslow (1943) recognizes the basic human need for security and for acceptance; humans need to feel respected to also have a sense of belongingness. It is difficult for a non-full-time instructor of higher education to fulfill this basic need. This is especially significant considering the current institutional trend in colleges and universities to primarily hire part-time over full-time employees.

Maslow's (1943) hierarchy can be applied to organizational practices of our higher education systems. Institutions of higher learning would be well-advised to consider this hierarchy and its postulates of basic human needs when embarking on strategic planning and cost-cutting measures for the individual institution. They must consider whether the institution is creating a sustainable work environment for its instructors that will ultimately, inevitably affect the institution's future student body and enrolment.

Part-time, sessional, and partial-load contracts are not likely to promote a sense of security and belongingness among instructors when considering their institution of employment, nor does this contract-to-contract lifestyle help instructors feel valued or adequately recognized by the institution. Leslie and Gamma (2002) suggest that

recognizing part-time faculty's abilities, instead of treating them as though they were expendable, will be beneficial in the long-term for the institution.

The trend favouring contract employment of instructors in organizations of higher education is short-sighted. This hiring practice may initially save the institution money since when hiring contract instructors, institutions do not generally have to pay for part-time employee benefits or pension, and the college or university can simply choose not to hire the part-time instructor for a subsequent semester, virtually hassle-free, if the institution so chooses. Contracts are *clean*, inexpensive in the short-term, and provide a revolving door of new instructors with fresh ideas who are hungry for work every semester. For these latter reasons, it is understandable why many institutions of higher education are opting to hire part-time contract employees over offering more full-time permanent positions. This is especially palatable to the institution when considering the rapid expansion of all programs into BL or OL-facilitated courses, since many of their current full-time permanent instructors have very little experience with OL teaching and learning. It may be deemed more efficient by the institution to temporarily hire a part-time instructor to set up an OL-facilitated course, and then hand this course over to a full-time instructor the following semester, than to initially train the full-time instructor, and spend money on professional development in the area of OL pedagogy and course creation and implementation. The latter would take time and additional funding, and these are perceived by some as scarce resources in institutions of higher education. In "Desired Versus Actual Training for Online Instructors in Community Colleges," Pagliari, Batts, and McFadden (2009) claim that though "lack of funding is certainly an issue," it is imperative that "administrators need to develop an infrastructure that provides

their faculty members with the resources and support to deliver high quality online instruction" (para. 50).

The idea of hiring primarily part-time instructors initially seems beneficial to the institution. These instructors will be hired, required to post information they have created for the OL and BL courses they teach, and since any posted materials become irretrievable intellectual property of the institution, the institution can use these materials any way they see fit; they can adapt the materials into other courses, or simply transfer the course materials to another instructor if the institution chooses not to renew the original part-time instructor's contract. However, as issues of ownership and copyright abuse become rampant, even the part-time instructors will feel relatively and correspondingly less secure, and therefore, understandably, will likely be more selective with the information they post OL. What will this do to the quality of education being provided by the institutions of higher education?

Ethically, it is wrong to continue with this trend of hiring part-time, sessional, and partial-load instructors to help create curriculum and courses for which, ultimately, they will receive no credit or future compensation. Financially, for the institution, it seems a palatable alternative to training and hiring more full-time permanent instructors. But, the questions remain: is this a sustainable business plan? And, how will this ultimately affect the quality of education provided by these institutions?

## Summary

This chapter has examined the research literature comparing OL and FTF learning outcomes from three perspectives: the student, the teacher, and the institution. Exploring the emergence of OL learning and the pedagogical similarities and differences between

OL and FTF teaching and learning, the research indicates advantages and disadvantages identified by the three groups.

**Students**

Students born after 1982 (the millennial learners) are familiar with technology and like the flexibility of OL learning with few time and place restrictions. They do, however, miss the FTF interaction with other students and teachers when considering OL courses. Many have difficulty with the need to manage their time without the traditional classroom structure and the OL requirement to be self-directed. Used to instant gratification, the millennial student likes to learn by doing, but OL courses often require reading and note-taking—activities which cannot be considered instant. For such students, FTF learning or a blend of OL and FTF learning may be the solution. Often the digital immigrants (students born prior to 1982) are better suited to OL courses since they have learned to manage their time and plan accordingly. Such students welcome the opportunity to educate themselves OL around the constraints of family and jobs.

**Teachers**

Teachers can find OL teaching a greater challenge than FTF educating, since facilitating an OL course can be significantly more time consuming than teaching a FTF class. Without a traditional classroom, many OL instructors are on call 24 hours a day, 7 days a week by their students. The lines have become blurred between work life and home life for both instructors and students. As a solution, some OL instructors refuse to bring OL work home or set OL office hours for their eLearning students. Also, issues of academic ownership and intellectual property can be complicated for OL instructors. Teachers, like students, find plagiarism a problem. For teachers working OL, they not

only have to deal with student plagiarism, but their own inadvertent mistakes since they are required to post course materials for the OL or BL courses. In addition, an effective OL teacher must consider student learning preferences and think about adding links to visual and auditory min-lectures, PowerPoint presentations, and interesting websites that complement and enhance course content. The trend toward teacher OL training and education must continue for OL learning to be successful.

**Institutions**

Institutions recognize that OL programs increase access to education for students who are unable or unwilling to attend classes. Notwithstanding, it is the cost savings provided by OL learning that seem most attractive to institutions which may be able to free up considerable physical space in favour of virtual space. Also, OL learning has the potential to reduce the need for offices if OL instructors no longer require designated office spaces on site. However, institutions must not assume that OL education and associated educative tools will improve education, reduce costs, or widen participation in higher education. As far as the efficacy of OL courses, most quantitative research studies find no significant differences in the perception of these courses. Institutions, like the students and teachers, face the problem of plagiarism. The institutions view it as a legal minefield together with copyright abuse. Plagiarism detection devices are common as is the temptation for OL students especially to cut and paste assignment data. The hiring of part-time facilitators is a trend especially favoured by institutions considering the rapid expansion of all programs into OL or BL-facilitated courses. For the institution, the move solves the problem of having full-time instructors inexperienced in OL pedagogy teach in

an unfamiliar environment , but causes other difficulties relating ultimately to the quality of education and maintaining a sustainable business plan.

Online teaching and learning has its place in adult education; however, it is essential that prospective OL students be self-directed enough to take advantage of this medium. Instructors of OL classes must be trained in OL pedagogy to be able to recognize and compensate for the differences between OL and FTF facilitation styles. One must be careful when considering OL education not to confuse this means with the course outcome. "Students will continue to integrate their personal technologies into their educational and social lives, and creative faculty members will respond in innovative ways to keep our current generation actively engaged in learning" (Moskal et al., 2006, p. 29). One must not assume that today's students of higher education are predisposed to OL means of education, rather adult educators should consider how to best provide course information in various ways in order to satisfy students' different learning needs and preferences.

## Cautionary Considerations

C.A. Bowers (1998) warns us that we must explore what is left behind when we are looking toward the future in terms of technology:

> The inherent characteristics of a pencil amplify the ability to put thought into permanent form, while not accommodating directly the sensory basis of knowing and communicating, as in speech or gestures. Just so, the characteristics of a computer also select for amplification certain aspects of cultural and personal experience, while reducing the presence and legitimacy of others. By considering

> these patterns of amplification and reduction, we can recognize more fully why computers should not be viewed as a neutral technology. (p. 52).

With the invention of the pencil, wonderful communicative things transpired—but what was lost? Something of storytelling from generation to generation was deemed obsolete. In a paper on Aboriginal teachings, Hill (1995) laments the general belief that information which is not presented in the form of the written word is viewed as inaccurate or illegitimate. When researching a subject over the Internet, people must know for certain that not everything one reads OL is accurate or legitimate. Indeed, the Internet can be a dangerously misleading tool if, say, the student user is not able to properly discern valid from invalid information. The notion of storytelling as a valuable educational tool is coming back into light.

Randy Pausch (2007), in his famous *Last Lecture* that became an Internet sensation, tells his audience, "Don't tell people how to live their life; tell them stories and they'll figure it out" (Video file). Hill (1995) claims that an oral tradition increases one's aptitude to think critically and determine fact from fiction based on one's own experiences. When considering education through technology, it is important to note that the "speed of change affects not only the lives of individuals but also the way in which society handles education. Instead of parents' passing what they have learned to their children, children today must learn lessons never known by their parents" (Cross, 1981, pp. 28-29). Millennial learners may lack the experiential maturity needed to navigate educational, technological self-directed learning courses in an OL environment.

Blended learning, which can be described as traditional classroom instruction supplemented with other electronic formats in varying increments, may be the ideal

method for today's generation of learners. A "lecture/lab" formulation of class is optimal both for students who wish to work on their own in a time of their choosing, and for those who need the one-on-one in-class attention of the instructor and the support of their peers to fully absorb the course materials. Brown (2005) states "The notion of the classroom has both expanded and evolved; virtual space has taken its place alongside physical space" (p. 12.2). Brown does not say that virtual space has taken the place of physical space; rather he describes the two "alongside" one another. A blended learning course scenario may be ideal for all types of adult learners.

At the Campus Technology 2012 conference held in Boston on July 16-19, 2012, most sessions dealt directly with using technology in the classroom. One session featured a panel of students from different colleges across the United States (e.g., NCS, UMC, ASU) expressing their thoughts on different educative technologies and lecture styles (CDW, 2012). The consensus from this session was that students enjoyed activities that kept them engaged in the class (clicker apps, etc.), liked having the option to view a recorded lecture (though most preferred to actually attend the FTF class), enjoyed mini-lectures followed by class discussion, and all agreed that feedback and access to their teachers were key. These students all thought it would be "cool" to use tablets in the classroom and said they might be more inclined to purchase eTexts if the prices were lower. These students claimed that they want their teachers to be knowledgeable about and to use technology like iPads in the classroom—but this makes them uncomfortable if their teachers seem hesitant or fumble with the technology in front of the class. Students on the panel ultimately posited that institutions need to keep the "pen and paper lecture" for those students who want it, and "add technology for those who would like that."

# CHAPTER THREE: METHODOLOGY AND PROCEDURES

This study uses a quasi-experimental mixed methods design to explore similarities and differences reflected in the outcomes of the same Communications class taught OL versus in a traditional classroom environment by instructors skilled in both formats.

A quantitative approach is used in one phase of this study to test whether OL courses produce similar learning outcomes to those of traditional FTF classrooms. The independent variables in this phase of the study are age, gender, and the types of instruction (OL and FTF). The dependent variable in this phase of the study is the course outcomes (grades, gain scores) indicated by the assessment tools used to measure student achievement (Appendix A) for both the OL and FTF courses in the quasi-experimental mixed methods research. Student responses to Likert-type scaled questions used in this study are also used to evaluate students' perceptions of "teaching and learning effectiveness" comparing OL and FTF facilitation (Appendix B). The goal of this aspect of the quasi- experimental mixed methods design is to provide some information illustrating whether course outcomes may be affected by the type of facilitation, comparing OL with FTF methods of instruction.

The mixed methods approach also provides an appropriate balance in this study by gathering quantitative data and qualitative information on complex human interactions, feelings, and emotions that cannot be quantified but are important considerations for the stated purpose of this study. The qualitative information was gathered from a transcribed interview of the two professors who participated in the study, and from students' written comments on the questionnaire explaining their attitudes regarding OL versus FTF facilitation style courses.

## Research Methodology

The purpose of this study is to explore the similarities and differences reflected in the outcomes of Communications classes taught OL versus in a traditional classroom environment. In this study, 400 students who were required to take the Communications course were divided into two groups: 200 of these students took the Communications course OL, and 200 students attended regular FTF classes for the same Communications course. Two professors, proficient in both in-class and OL instruction, were assigned 200 students each. Each professor was given two sections of 50 students for the FTF Communications course, and two sections of 50 students who took the OL Communications course, identical in content to the FTF Communications course. Therefore, each professor was initially given 100 FTF students and 100 OL students for their respective Communications course.

The study uses a quasi-experimental, explanatory mixed methods design to compare outcomes achieved through OL education versus those achieved through a traditional FTF classroom environment. This approach was needed for this study in order to obtain quantifiable information from the research. Participants in the study were also surveyed upon completion of the Communications course to gather qualitative information for the study, in order that the researcher may better understand the participants' perspectives through their descriptions within the researcher's frame of reference. Students were encouraged to share their OL class environment experiences, as well as their FTF class experiences of the Communications course. The discussion and ideas suggested by both the teachers and the students involved in the study will be of use to future instructors of both OL and FTF teaching environments.

## Research Design

The between-group research design utilized in this study was quasi-experimental (See Figure 1). This particular research design was required since the students who participated (the subjects) in the study were in pre-existing groups. The community college setting is prohibitive for forming artificial or truly randomized groups because all attending students are enrolled in courses specifically scheduled to accommodate their program "block."

## Establishing Credibility

Validity and reliability are essential to establishing the credibility of a research study. In this study, several methods were used to establish credibility. These included the instruments prior to the beginning of the study (diagnostic assessment test), the rubric used, the use of blind-marking, and the collection of data through the questionnaire and through the interview.

Reliability of an instrument "means that the scores from an instrument are stable and consistent" (Creswell, 2008, p. 169). Validity of an instrument "means that the individual's scores from an instrument make sense, are meaningful" (Creswell, 2008, p. 169). Using reliable and valid instrumentation enables a researcher to draw meaningful conclusions from the data.

The questionnaire (see Appendix B) used in the study was created from the college's Student Feedback on Teaching and Learning Effectiveness questionnaire and from Stephen D. Brookfield's (2006) Critical Incident Questionnaire.

Time

| | | | |
|---|---|---|---|
| Select control group:<br>In-class students | Pre-test:<br>Written assessment | No treatment:<br>In-class instruction | Post-test:<br>Written assessment |
| Select experimental group:<br>Online Students | Pre-test:<br>Written assessment | Experimental treatment:<br>Online instruction | Post-test:<br>Written assessment |

*Figure 1*. Quasi-experimental pre- and post-test design.

The rubric (see Appendix A) used in the study was created to evaluate college writing and was used by the college's language studies department to assess initial writing samples (diagnostic), and mid-term and final written exams.

For consistency in grading, blind-marking sessions were held in this college. The same blind-marking practice was used in this study to ensure the evaluation of data was unbiased.

Multiple measures, the use of quantitative and qualitative data, were used to collect data, providing an opportunity to establish triangulation which is used to ensure the accuracy and credibility of the study's findings. It is "the process of corroborating evidence from different individuals, types of data, or methods of data collection in descriptions and themes of qualitative research" (Creswell, 2008, p. 266). The information collected from the questionnaires, test scores, and interview contributed to the triangulation of data and the validation of the study's findings. The transcribed interview was verified by an outside party to ensure the wording was accurate. Threats to internal and external validity have been minimized because the study occurred over a short period of time.

## Participants and Instructional Context

Approximately 400 students were given a choice as to whether they wished to take the mandatory Communications class OL or in a traditional FTF classroom environment. The FTF and OL classes began with an equal number of students. All students were given a written assessment test prior to the first week of class. This written assessment served as the pretest for the study. Though there was no course grade assigned to these assessments, the pretest was double-blind marked and scored out of 24 according to the Assessment Rubric (Appendix A). The course materials for both the OL

and the in-class Communications classes were identical. Two professors were assigned to the classes. Each professor had two OL and two FTF sections of approximately 50 students each in the four Communications courses. The professors taught six course modules to each of these classes. The materials contained in these modules were identical. The only difference was in the method of presentation: two of the professors' four classes were presented OL, and in the other two of the classes, the material was given in the manner of a traditional FTF classroom. At the end of this Communications course, all students (OL students included) were required to come in to the college to write an assessment test (within the context of a final exam), similar in format to the assessment given prior to the first week of the course. The final exam served as the post-test for the study and was double-blind marked using the same methodology as for the pretest assessment.

## Ethical Considerations

This study is considered as representing minimal risk to participants. Prospective subjects were given an Information Letter and a Free and Informed Consent Form before the study began. These items outlined the purpose of the research, access to the results of the research, and the method and timing of the project. Subjects were able to ask questions about the study for its duration and were offered access to the project upon its completion. Privacy and anonymity of participants was ensured. Consent was also given from course instructors. There was no risk to instructors; they are not identified in the study, nor were the students or the college.

The Information Letter explained that subjects were free to withdraw from the study at any time without consequence and that data would be removed from the study and

destroyed should the participant have chosen to withdraw. The Free and Informed Consent Forms were shredded 30 days after completion of the study, and any e-data collected from the participants were deleted. There was no participant compensation for this study.

Blind student numbers were used in the study; there was no access to connecting names and numbers. Anonymity of participants was protected by assigning numbers or aliases to returned instruments, and this kept the identity of individuals confidential and ensured participants' privacy.

Only the research investigator, Shantal Woolsey, under the supervision of Professor Michael Kompf, had access to the data which was stored in a secure location in the investigator's computer and home. An external assessor collected the participants' pre-test (assessment essays that have been completed before the beginning of the course) and also collected post-test scores that were assessed at the end of the course. The instructors of the courses did not know the specific identity of the participants, though it was possible that all students taking these courses would be participants.

Any written records and questionnaires were secured in a locked cabinet of the principal researcher's home office for the duration of the project. Written records were shredded, and any e-data collected from the participant was deleted following the completion of the project.

Ethics clearance was granted by the college, and by Brock University's Research Ethics Board (10-028-KOMPF) prior to the initiation of this research study.

## Measures

The study used the following measures to evaluate learning and experiential outcomes of FTF versus OL Communications courses.

**Assessment Rubric**

Student participants in this study were all required to complete a written assessment test which was measured using the Assessment Rubric shown in Appendix A. Students' writing of this assessment was double blind-marked by external assessors for the initial assessment test, and double blind-marked by the same external assessors for the exit assessment test. "Double blind-marked" means that each student paper was scored at least twice by external assessors who otherwise had no connection to the student nor the student work being assessed. If there was a discrepancy in scoring of more than two out of the possible 24 points on the rubric, the paper would go to a third scorer to be blind-marked in order to settle the discrepancy. If there was a discrepancy of two or less points, the assessment score would be blended. For example, if the first blind-marked assessment of the paper was 12/24, and the second blind-marked assessment was scored 14/24, the paper would be recorded as having been scored 13/24. The resulting scores were the quantitative measure for the study.

**Questionnaire**

Students were asked to fill out a questionnaire at the end of the course based on the college's Student Feedback on Teaching and Learning Effectiveness questionnaire and on Stephen Brookfield's (2006) Critical Incident Questionnaire for in-class and OL courses. The questionnaire also included some background and open-ended questions (see Appendix B). Participants' answers on the questionnaire were a qualitative measure for the study.

### Interview

After all other data were collected, the professors who participated in the study were asked a number of questions at the end of the semester about their experiences teaching the OL and the FTF Communications courses in the study. The professors' answers to the interview questions were another qualitative measure for the study.

## Instrumentation

The Assessment Rubric (Appendix A) has been perfected through its use in a number of pilot studies. Several southwestern Ontario community colleges have adopted similar assessment techniques that use comparable assessment rubrics with considerable success. In previous studies at this college, an assessment rubric had been used to score student essays. Prior to scoring these essays, instructors were trained on how to score consistently, and spent approximately two to three training sessions per semester maintaining and perfecting their scoring technique so that all instructors could be synchronous in their scoring of the assessment essays. In these previous studies, an external assessor would score the initial assessment essay (pre-test), an instructor would blind mark/score the student's mid-term essay (not used in this or previous studies), and the previously trained instructors would double-blind mark the final (post-test) student essays. This means that each "final" student essay was marked by two instructors (other than the student's own instructor); the blind-marking ensured that each score given to the paper was kept secret from all other scorers. An external assessor would then view all scores for each essay. If there were any discrepancies in scoring (a range of two marks or more in the scoring of one of the papers), another independent assessor would be asked to

give the paper a third read. This scoring technique is similar to that used in the provincial EQAO scoring of the essay questions for the grade 10 provincial assessment testing.

## Selection of Participants

The Communications courses selected for this study were open to all students required to take the course at a community college in southwestern Ontario during the Fall 2010 semester; therefore, all of those students were potential participants. All students who fit this profile were given the option of taking the Communications course FTF or OL when they registered for the course prior to September 21, 2010. The researcher, or a representative from the assessments office, presented the students with the Information Letter, explained the research, and asked that the student sign the Free and Informed Consent Form should he or she wish to participate in the research. The researcher did not have a relationship to the target groups other than to collect data for the purpose of the project. The instructors were not aware of the specific identity of the participants; the research did not link grades or scores to any names. There were no incentives offered to subjects for participating in the research since nothing was altered from their regular school routine.

## Ethical Considerations

This study involved human participants and, therefore, an ethics review was completed through the Brock University Research Ethics Board and permission was granted from the college where the study took place. The college approved the study on July 22, 2010, and Brock University Research Ethics Board cleared the study on August 19, 2010 (10-028-KOMPF).

Due to the nature of the study, ethical considerations were given to the informed consent of the participants. Only those students who signed the informed consent form and who completed the course were included in this study. The two professors also signed the consent form.

Students were offered an informed consent form and a letter of information at the beginning of the Fall 2010 semester. Participation in the study was optional for all participants.

The researcher was employed as a teacher at the college where the research took place. The researcher did not teach the classes involved in the research study.

**Confidentiality**

In this study, no confidential information revealed by participants was shared with anyone except the researcher. To keep the information confidential, several precautions were taken. All written materials collected were stored in a secure location to protect the data; only the researcher had access to this location. All electronic data were stored on a password-protected computer. Anonymity of the participants was maintained by removing the participants' names and student IDs from the collected data.

Participants are described collectively in the study, and in general terms (e.g., female, age 17-20). The name of the college is not reported in the findings. Only general descriptions of the site (e.g., location in Ontario) are reported.

## Data Collection and Recording

Students enrolled in this (and all other) Communications classes were asked to write a five-paragraph response to an article prior to beginning the course. This piece of writing was used to diagnose the students' level of writing at the beginning of the course,

and served as the "pre-test" for this study. There was no grade assigned for this assessment. The participants' written work was not collected for this research; the research only looked at the assessment scores of the participants. The college's policy is to store all student assessment materials for 5 years. The midterm exams for the Communications courses were all executed in this same five-paragraph format and the final exam also required a five-paragraph essay. The final exam papers served as the "post-test" in this study. The researcher only compared the outcomes of the initial assessment piece of writing with those of the writing sample from the final exam. Both the pre-test (initial assessment) and the post-test (final exam) were a five-paragraph essay. A rubric was used to evaluate the students' writings (see Appendix A). It is a normal part of the course to have instructors of the Communications classes administer these exams and evaluate the student writing. For the purpose of this research, external assessors—who were previously trained in using the rubric and who had participated in norming sessions to ensure they could score papers effectively using the rubric—were also used to evaluate all documentation. Students were asked to fill out a questionnaire at the end of the course based on the college's Student Feedback on Teaching and Learning Effectiveness questionnaire and on Stephen Brookfield's (2006) Critical Incident Questionnaire for both the in-class and OL courses. There were also some background questions and open-ended questions on the questionnaire (see Appendix B). Secondary data were not collected for this research. The professors who participated in the study were interviewed at the end of the semester. The interview was recorded and transcribed for use in this study. Professors' names were not released.

## Data Processing and Analysis (Statistical Analysis)

The study used several methods of data processing and analysis. One of the goals of this study was to determine whether or not there are differences in the gain scores of OL versus FTF Communications classes. Quantitative methods were used to determine if there were differences evident and to determine whether there were any differences between age groups of students participating in the study.

Quantitative research can be defined as "a type of educational research in which the researcher decides what to study; asks specific, narrow questions; collects quantifiable data from participants; analyzes these numbers using statistics; and conducts the inquiry in an unbiased, objective manner" (Creswell, 2008, p. 46). Quantitative data were collected through the questionnaires and through the pre and post-tests that were triple-blind evaluated using the rubric. Software programs SPSS and Microsoft Excel were used to analyze the data.

Another goal of the study was to gain a deeper understanding of the participants' thoughts and feelings regarding OL- versus FTF-facilitated courses. For this purpose, qualitative methods were used in the form of the questionnaire from the student participants, and in the form of the interview with the professor participants. Qualitative research can be defined as

> a type of educational research in which the researcher relies on the views of participants; asks broad, general questions; collects data consisting largely of words (or text) from participants; describes and analyzes these words for theme; and conducts the inquiry in a subjective, unbiased manner. (Creswell, 2008, p. 46)

The researcher collected qualitative data through a student-participant questionnaire and through a professor-participant interview. The student-participants' answers on the questionnaire were analyzed for possible themes. The professor-participant interview was transcribed and the answers were analyzed for possible themes.

Data collection began immediately with the diagnostic/pre-test at the beginning of the semester in September, 2010. The post-test and questionnaires were completed at the end of the semester in December, 2010. The interview with the professor-participants took place in January, 2011. Data collection processing took place from January to April, 2011, when the blind-marking assessment was done. The data were analyzed between May and July 2011.

The data processing and statistical analysis are divided into three phases: phase 1, chapter 4, quantitative statistical analysis; phase 2, chapter 5, qualitative analysis; and phase 3, chapter 6, a cohesive relating of the findings of phases 1 and 2.

**Phase 1**

For the quantitative statistical analysis, the information was analyzed by performing a t-test using the SPSS quantitative analysis computer program. If the t-test results were not significant, a chi-square analysis was used to measure whether there was a significant difference between scores.

**Phase 2**

For the qualitative questionnaire information, Excel was used to document participants' answers and to find relevant associations and meanings in the text. The professor-participant interview was transcribed and key points from the interview can be found in this phase.

**Phase 3**

In this section, the information collected from the quantitative and qualitative phases of the study is related.

## Limitations

The quasi-experimental approach used in this study introduces considerably more threats to internal validity than if this study were to be conducted as a true experiment (Creswell, 2008). Since the subjects of this study were in pre-existing groups, true experimental random assignment was not possible, and therefore, potential threats to internal validity such as "maturation, selection, mortality, and the interaction of selection with other threats are possibilities. Individuals assigned to the two groups may have selection factors that go uncontrolled in the experiment" (Creswell, 2008, p. 314). In this study, the participants who were students in the OL classes chose to be in the OL class. Therefore, it was not a random sampling, and it is possible that these participants may have known that they would ultimately prefer OL learning as opposed to learning in a FTF class environment. Some of the participants in the OL classes may have previously taken classes OL and could have known from previous experience what it would take to succeed in an OL learning environment.

Limitations of a study may also exist when the researcher uses a pre-test/post-test design where threats of "testing, instrumentation, and regression" (Creswell, 2008, p. 313) may occur.

It is also relevant that, particularly due to the nature of OL courses, the 183 student participants in the study came from more than 40 different college programs. There were more than 40 different college programs represented in the participants of the

OL courses, whereas the FTF courses comprised a maximum of two or three different programs. This is because each program in the college has a specific timetable (program block), and students must take their Communications courses during the allotted time in their specific timetables. Of course, the participating students choosing to take the Communications course OL would not need to adhere to their program block. The outcome of this study would be more relevant if the study compared the results of the participants from the same program. Measuring the learning of OL participants from more than 40 different programs to that of FTF participants from three different programs is not ideal. These results could never be generalized.

A portion of the qualitative research done in the study involves the questionnaire (Appendix B). Page 2 of the questionnaire (containing questions 11, 12, 13, and 14) was removed from the research due to incomplete distribution which caused spoiled or missing returns of this portion of the questionnaire. After discussion with the faculty advisor of this research study, it was decided that the removal of this portion of the questionnaire from the study would have no significant impact on the overall findings.

## Assumptions

There are a number of assumptions related to this study. One assumption made is that all participants in the study answered the questions on the questionnaire honestly and to the best of their ability. Another assumption is that the professors in the study presented identical content and that the only difference between the FTF and the OL versions of the Communications class was the presence or absence of a physical, regularly scheduled FTF class. It is assumed that the courses offered the same learning

materials and assignments and that these assignments were graded the same way regardless of whether the course was taught FTF or OL.

## Restatement of the Problem

The purpose of this study is to explore how the learning outcomes of a Communications course facilitated entirely OL compare with the learning outcomes attained for the same course taught as a FTF class. The study seeks to determine whether or not there are outcome-based or experiential differences between OL and FTF versions of the same course. The study uses a quasi-experimental, explanatory mixed methods design to compare learning outcomes achieved through OL delivery versus those achieved through a traditional FTF classroom delivery model. The mixed methods approach used in this study was needed in order to obtain a balance of quantitative and qualitative information from the research. Students partaking in the study were surveyed upon completion of the Communications course in order to give them the opportunity to provide qualitative information to the study and to give inductive and personal observations that would enable the researcher to better understand the participants' perspectives and link them to the quantitative results of the study. Students and their professors were encouraged to share their class environment experiences, whether they were in the FTF or the OL Communications course. The discussion and ideas suggested by both the students and the professors involved in the study will be of use to future instructors of both OL and in-class environments.

This study hopes to measure the learning that occurs by comparing the pre- and post-tests of the OL and the FTF facilitated courses, and perhaps address whether a grade given in an OL class can be given the same value as a grade given through taking the

identical course in a FTF class. These findings, together with insights from the literature on OL and FTF teaching and learning from the perspectives of the students, the teachers, and the institutions lead to implications for theory, practice, and further research.

# CHAPTER FOUR: QUANTITATIVE FINDINGS

This study compared FTF and OL versions of a Communications course. Each version of the course offered identical content; the only difference between these Communications courses was the instructional delivery approach (i.e., either OL or FTF). Furthermore, this study examined whether differences existed among students of different age levels and gender.

Specifically, the study's main research question was "Does a student's enrolment in an OL versus FTF course have an impact on learning?" The study examined gain scores and final grades to answer the research question.

A comparative analysis was performed to determine if any variation occurred among students of different ages. The study also investigated student preferences regarding OL versus FTF instruction and classes. Levene's test—which "tests the hypothesis that the variances in the groups are equal" (Field, 2005, pp. 97-98)—was performed on all data to determine the homogeneity of variances. It was determined that $p>0.05$, which indicates the null hypothesis must be accepted because the difference between the variances is zero. As a result of the normality and homogeneity testing, nonparametric testing was performed on the data.

The perceived teaching effectiveness of the courses was measured using a Likert scale. The quantitative data were analyzed using SPSS and Excel.

The quantitative research findings examined in this section have been organized under the following headings: Differences in Pre-test, Post-test, Gain Scores, and Final Grades Between OL and FTF; Differences Between Age Groups; and Differences Between Gender.

**Differences in Pre-test, Post-test, Gain Scores, and Final Grades Between OL and FTF**

Analyses were performed using SPSS to identify any differences in pre-test, post-test, and final grade scores of the student participants when examining the OL and FTF versions of the course (See Tables 1 & 2). There were no significant differences found in the gain scores between these two groups when examining the pre-test ($p<.184$), the post-test ($p<.234$), and the final grades ($p<.310$). No significant differences were found when the OL versus the FTF students' pre-test, post-test, and final grade scores were compared altogether.

However, when comparing the means of the homogeneous subsets for the pre-test score, post-test score, and final grade, the OL male participants and the FTF female participants show the most significant difference in gain scores (See Table 3). This may indicate that male students learn better OL, and female students learn better in a FTF environment.

**Differences Between Age Groups**

A student's age may have an impact on his or her relative success in a course determined in this study by grade and learning, as measured by gain scores, through the duration of the course. It has been hypothesized that as students age, they may take more responsibility or pride in their education. Results indicate that age and maturation may play a part in students' success in their courses. Analyses were performed using SPSS to identify differences in gain scores and final grades between the age groups when comparing results from OL and FTF classes. Results of this study indicate that the 17-20 year-old groups in both the OL and FTF classes did comparatively worse than most other age groups when examining gain scores and final grades. The 17-20 year-old age group

Table 1

*Test of Homogeneity of Variances*

| | Levene statistic | df1 | df2 | Sig. |
|---|---|---|---|---|
| Pre-test score | .107 | 3 | 135 | .956 |
| Post-test score | .692 | 3 | 137 | .559 |
| Final grade | .682 | 3 | 179 | .564 |

Table 2

*ANOVA*

| Variable | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| Pre-test score | | | | | |
| Between groups | 703.520 | 3 | 234.507 | 1.637 | .184 |
| Within groups | 19344.451 | 135 | 143.292 | | |
| Total | 20047.971 | 138 | | | |
| Post-test score | | | | | |
| Between groups | 217.987 | 3 | 72.662 | 1.439 | .234 |
| Within groups | 6918.197 | 137 | 50.498 | | |
| Total | 7136.184 | 140 | | | |
| Final grade | | | | | |
| Between groups | 463.792 | 3 | 154.597 | 1.205 | .310 |
| Within groups | 22972.514 | 179 | 128.338 | | |
| Total | 23436.306 | 182 | | | |

Table 3

*Participants' Mean and Gain Scores*

| | Score | | | |
|---|---|---|---|---|
| Group | Pre-test | Post-test | Gain | Final grade |
| Males OL | 58.97 | 75.59 | 16.62 | 73.58 |
| Males FTF | 65.14 | 73.75 | 8.61 | 74.11 |
| Females OL | 61.08 | 75.92 | 14.84 | 76.99 |
| Females FTF | 59.29 | 77.58 | 18.29 | 77.28 |

scored equally poorly when comparing the gain scores and final grades FTF and OL groups of the same age.

A t-test was used to determine if a student's age had an impact on his or her grade. The findings revealed that, overall, age significantly affected final grades. (Figure 2 plots the mean numbers of the final grades for each age group of the study.) The results showed a significant difference between student participants who were between the ages 17-20 and those who were in higher age categories (See Tables 4 & 6). The results examining final grades suggest that 17-20 year-old students did not perform as well as those in other age groups.

The findings also show that there is no significant difference in mean when comparing the success of 17-20 year-old students in the OL class, and 17-20 year-old students who took the course in class. There is a difference of 2.81% between the gain scores of the 17-20 year-old students who took the course OL and those who took it FTF (See Table 5).

Significant differences were found when comparing 17-20 year-old students with other age groups, including pre-test scores between 17-20 year-olds who took the course OL and 21-28 year-olds who took the course FTF ($p<0.022$); post-test scores between 17-20 and 21-28 year-olds who took the course FTF ($p<0.012$); post-test scores between 17-20 year-olds who took the course FTF and 29-36 year-olds who took the course OL ($p<0.047$); and post-test scores between 17-20 year-olds who took the course OL and 21-28 year-olds who took the course FTF ($p<0.033$). There were no other significant differences found between any other age groups.

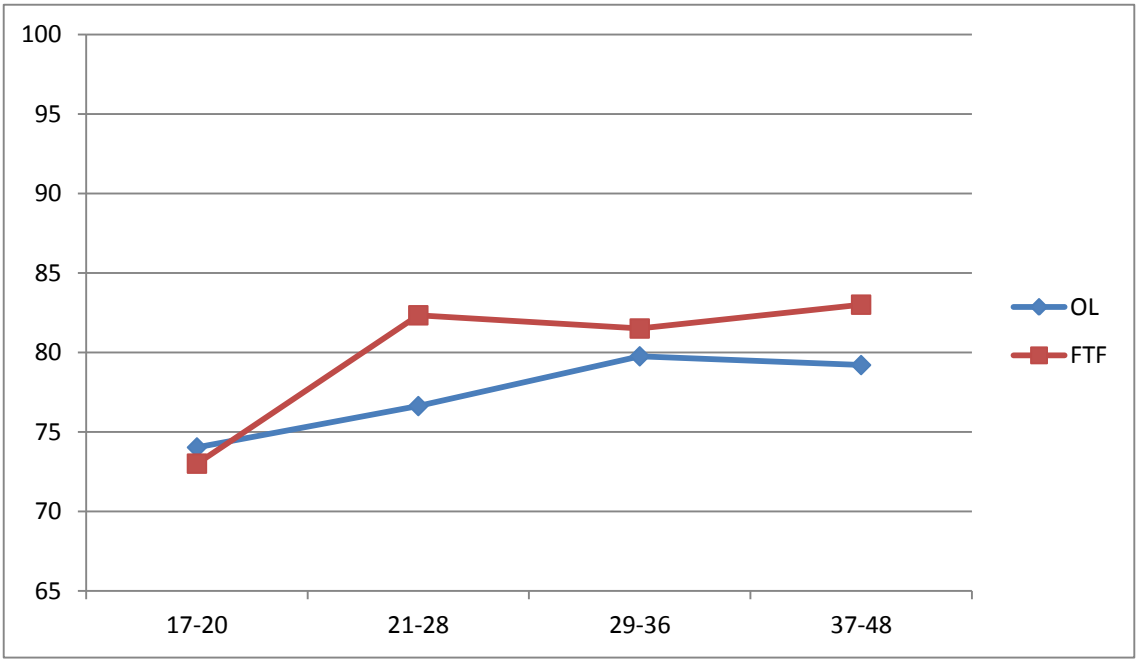


*Figure 2*. Age group comparison of participants' final grades.

Table 4

*Final Grade*

| | | | Subset for alpha = 0.05 |
|---|---|---|---|
| | Age group | N | 1 |
| Tukey HSD[a,b] | 17-20 IC | 51 | 73.00 |
| | 17-20 OL | 51 | 74.02 |
| | 21-28 OL | 42 | 76.62 |
| | 37-48 OL | 10 | 79.20 |
| | 29-36 OL | 8 | 79.75 |
| | 29-36 IC | 4 | 81.50 |
| | 21-28 IC | 15 | 82.33 |
| | 37-48 IC | 2 | 83.00 |
| Sig. | | | .682 |

*Note*. Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean sample size = 7.242.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 5

*Mean and Gain Scores for Participant Age Group 17-20*

| | Score | | | |
|---|---|---|---|---|
| Group | Pre-test | Post-test | Gain | Final grade |
| 17-20 OL | 59.05 | 74.55 | 15.50 | 74.02 |
| 17-20 FTF | 61.03 | 73.72 | 12.69 | 73.00 |

Table 6

*Participants' Age Group*

| Age | Online ($n$ = 111) | In-class ($n$ = 72) |
|---|---|---|
| 17-20 | 51 | 51 |
| 21-28 | 42 | 15 |
| 29-36 | 8 | 4 |
| 37-48 | 10 | 2 |

## Differences Between Gender

No statistically significant differences were found between male and female participants when considering final grades and gain scores of students taking the OL version of the course. However, a significant difference was found in the final grades and gain scores between male and female participants taking the FTF version of the course.

Female participants taking the FTF course did significantly better in the pre-test than male participants taking the FTF course ($p<.063$). A significant difference was also found in the pre-test when comparing male students in the FTF versus the OL version of the Communications course ($p<.048$).

# CHAPTER FIVE: QUALITATIVE FINDINGS

Qualitative data were collected through two sources: an interview with professor participants and a questionnaire given to student participants. The professors' interview responses were recorded and transcribed verbatim. Qualitative data gathered from students' written answers in the questionnaire were coded to identify common themes.

The qualitative findings examined in this section have been organized in sections titled Interview With Participant Professors (with subsections titled Time Spent on OL Versus FTF Courses; Health and Ergonomic Concerns; Deficiencies and Limitations—OL Versus FT Courses; Support From Institution; and Professor Preference) and Student Questionnaire (with subsection titled Student Preference—OL Versus FTF; FTF Student Participant Preferences; and OL Student Participant Preferences).

## Interview With Professor Participants

An interview was used to gain understanding of the professors' feelings, attitudes, behaviours, and experiences. The information collected helped to determine whether or not there were differences in facilitating OL and FTF Communications classes based on their experiences. The results of the interview contribute to an understanding of current faculty perceptions of OL versus FTF Communications classes. The interview also provided the professor participants with an opportunity to discuss their experiences teaching the OL and FTF versions of the Communications course. Major themes developed from the analysis of the interview data were: time spent on preparation, marking, student communication, and teaching the OL versus FTF course; health and ergonomic concerns; deficiencies and limitations of each method of facilitation; and support provided by the institution for OL- and FTF-facilitated courses (See Table 7).

Table 7

*Overview of Identified Themes*

| Major theme | Subthemes |
|---|---|
| Time | Development of content<br>Facilitation<br>Management |
| Health | Ergonomic issues (eyes; hands) |
| Limitations/deficiencies | Technology (slow computer)<br>Wi-Fi<br>Student expertise |
| Support | For faculty<br>For students |

**Time Spent on OL Versus FTF Courses**

The creation of the OL Communications course took the most time initially, but since it was created to "open" weekly modules automatically and all the content was previously set, the assumption was that it would take less time to facilitate than the FTF version of the course—a 3-hour in-class weekly delivery. "The upside [of facilitating OL] is you're not having that huge prep time every week." In the interview, however, both professors agreed that they spent significantly more time on the OL than the FTF Communications courses. The professors claimed that facilitating the OL course was 10 times more work than facilitating the in-class version of the Communications course, and claimed they could mark a hard-copy of an assignment in "one-tenth" of the time it would take to mark an e-copy of the same assignment. Reasons for this can be attributed to the nature of OL learning; the time and place freedom that makes OL courses so appealing for students can make teaching an OL course more time consuming for the professor.

Professor participants in the study claimed they felt "this burden of increased availability." If a student has a question during FTF class time, he or she can expect a fairly instant response from the professor teaching the class. If a student has a question in an OL class, he or she may expect a virtually instant response to the e-mailed inquiry. The professor may be bombarded with e-mailed questions of the same nature before he or she has a chance to post an answer to the OL course (in anticipation of more student inquiries on the same subject). The professors in this study claimed that students would be outraged when their e-mailed questions asked at 8:00 p.m. on a Friday night remained unanswered by Sunday morning. One of the professors said she dreaded opening her e-

mail Monday morning for fear there would be 80 “urgent” e-mails to address. To combat this, professors often answer students’ e-mailed questions on traditionally “off” hours. This negates the *time and place* freedom of OL facilitation. One professor set up OL office hours when students could expect an immediate response; otherwise, she promised an answer within 24 hours on a weekday and said that she would only check e-mail sporadically on weekends. Setting these parameters helped alleviate the pressure of students’ expecting an immediate response to their inquiries. Unfortunately, not all students were able to benefit from the professor’s OL office hours, since many of them had a FTF class at that time.

The FTF Communications course in the study was a 3-hour delivery. Professors in the study claimed that they spent far more time working on the OL delivery due to student inquiries and marking. This extra time in front of a computer screen prompted the participant professors to pose their health and ergonomic concerns regarding the instructional delivery of the OL course.

**Health and Ergonomic Concerns**

Professors in the study claimed it was physically easier to mark a hard copy of a paper than it was to mark a paper OL. They claimed it was physically more uncomfortable to mark papers OL citing problems with their eyes, wrists, and necks. The professors in the study laughed during the interview when they said they would see one another walking around the office massaging their wrists and stretching their necks while taking a break from marking papers from their OL courses. One professor now wears glasses and claims it is because of the eye-strain associated with facilitating the OL

courses during the study. The professors in this study taught "Communications" which is a writing course. One professor posited that

> if you have an OL course where you're just doing multiple choice quizzes and everything is set up to self-mark, that's fine, but if you're putting the effort into marking and doing a good job with feedback – going in and editing, putting in comments, rubrics, and more comments—it takes a toll.

The other professor in the study added that if the institution continues to "push" OL courses to faculty, "then maybe we need Occupational Health and Safety to come in and say 'How's your ergonomic situation?' because you are going to be spending HOURS in front of that computer."

Both professors also claimed that teaching OL could be more stressful than teaching FTF. "It's just overwhelming and very, very time consuming," one professor noted when she spoke of having 161 new discussion messages from one OL class during the first week of the semester. Professors in the study were given two OL classes of 50 students each, and described the amount of work as "enormous," especially around times of assignment deadlines.

Student inquiries from the OL course were often "panicky" e-mails where the student wanted an immediate response. One professor claimed she often felt "worried," "nervous," or "anxious" about the number or context of OL student emails she would need to open every morning. The text of student inquiries from the OL course often seemed "curt." Though it is often difficult to detect things like tone in a written inquiry, it seemed to these professors that students would likely be more cordial were they to meet FTF regarding their questions.

**Deficiencies and Limitations—OL Versus FTF Courses**

An obvious deficiency of OL-facilitated courses, as cited by the professors in the study, is the lack of FTF interaction with the students. One of the benefits of being a professor is meeting many different students, helping them learn, and witnessing their growth over a semester. It is easier to gauge which students are engaged in a FTF class than in one facilitated OL; it is also easier to see which students may be having trouble with the content. Though in the OL version of the course, professors were able to see students' progress through the course—who logged-in when, how much time a student spent on a module, et cetera—this was not necessarily indicative of a student's comprehension of material or ultimate success in the course:

> It's so much more efficient to talk to someone to explain something. Written communication takes a lot longer to explain to someone, to understand a concept, or even just to write about a technological issue with the computer. So, it's just so much more efficient to see them. And also, you're picking up tone, you're picking up the level of miscomprehension, which can be subtle, or which can be huge, and you're not picking this up in an email which says "Hey Miss, I don't get it." So, there's also so many more exchanges to get to the bottom of when it's a heinous "I don't get it" email. I just find a huge issue with efficiency.

Both professors found it strange to introduce themselves for the first time in person to their OL students at the final exam:

> It's a bizarre feeling to walk into the final exam and introduce yourself. That's usually my moment when I'm joking around with them, trying to calm anyone

> down who's nervous… I can't do that [with my OL students]. I don't have the luxury of doing that—of being that casual with them.

It is more difficult to build a rapport with students when the professor has never met them in person.

This holds true for the students as well; professors in the study claimed there were more problems with the OL student group work than with group work assigned in the FTF course. Face-time between students and their professor, and between students with their peers enhances relationships and accountability.

Professors claimed the OL course seemed to be exceedingly difficult for "anyone who has language deficits" since reading comprehension is vital to success in the OL writing course. One professor lamented that a student failed the OL course, in part, because she did not tell the professor about her learning disability, so did not receive the accommodations to which she would have been entitled. The professor seemed to think that this student would have spoken with her ahead of time if she had attended the FTF class.

One professor mentioned that she thought age and maturity were significant factors for predicting students' success in the OL course:

> I definitely find that if they're adults and if they have children or if they are some sort of mature student or a returning student, they do really well, and they "receive" the course better because they have an ingrained sense of discipline already, or they're in the workforce. You know, you get up at a certain time, and you meet certain [deadlines] and so I find that, ironically, what you would find is that the more technologically adept group demographically—the younger group—

struggle more in the online course.

Professors complained about the limitations Internet connectivity and speed posed on their OL work:

> The technology sucks up all the time.… For example, last week with a posting that was due, one student decided to do his as an attachment. He was one of the first to post, so everybody that saw this decided to do theirs as an attachment. Now for each posting, I'm going into the posting, opening the attachment, watching the little circle while it loads. It must have added 3 extra hours, because I have two sections of 50, to mark a posting and get in the comments. Everything is just slow. I think that is the part I hate because it's not extra hours into something that's intellectually satisfying. It's extra hours in mechanical dumbness that's empty. It's not good for the students. It's not like it's extra hours that I'm providing great things for my students – it's extra hours that I'm staring at the computer and trying to get it to go faster and trying to figure out the "cut and paste" to get feedback to all of them quicker. That makes me crazy!

Both professors advocate for "small class sizes" for their OL Communications course:

> You're not only dealing with class sizes, but you're also dealing with technology—the differences in students' aptitude for the technology, and also what they have in technological software. So I'm constantly battling with my students to put things in a certain file format because I won't be able to open it if they give it to me in "Pages" or whatever. And also the students who tell me, 6 weeks into the course, that they don't have a computer. Or they don't have

"Windows" and you don't know how they've been sending you things. Or they don't know how to get on to "discussions."

Both professors admitted that at times it would take 30 seconds to 2 minutes between "clicks" to refresh a page or flip through a student paper submitted OL. Students would claim to have trouble opening certain PowerPoints or viewing video clips; sometimes this was due to internet connection, sometimes it was compatibility issues—but almost every time, the student would contact the professor instead of the eLearning department that they were specifically asked to contact when having technical difficulty.

**Support From Institution**

There are no teaching assistants available to professors at the college where the study took place. This may be something for the institution to consider since the volume of marking typically ascends with the number of students per class, and the OL Communications classes are being capped at higher numbers every year. When the OL Communications course began in 2009, it was capped at 30 students. The next semester, it was capped at 40 students. For this study, OL classes were capped at 50 students. Currently, in 2012, the OL Communications course is capped at 65 students. The professor participants recommend capping OL writing courses, such as the Communications course in this study, at 25 students, and capping FTF writing courses at 40 students. The difference in these recommended caps can be attributed, in part, to the time it takes to mark written assignments as well as to the accompanying health and ergonomic concerns that go along with facilitating an OL writing course. The OL Communications course does not use any multiple-choice-type tests. All assignments and exams are written. Due to the written nature of these assignments and exams, they take

considerably more time to mark than were they multiple-choice or short-answer type assessments.

Support is available to faculty and students through the college's eLearning department. Though students were encouraged to contact this department with their technical problems, they generally went to their professor first for help. The support of the eLearning department was beneficial to professors and students, though the hours of operation were not necessarily helpful since most students and the professors would have questions after business hours when they had time to work on the course—usually in the evenings or on weekends.

Some faculty believe that the institution should provide laptops to all those expected to teach OL courses. One professor incurred viruses on her laptop, on two separate occasions, due to opening infected student assignments; she lost valuable information and she had to pay to have her laptop fixed.

**Professor Preference**

When asked which facilitation style the professors prefer (OL or FTF), both professors stated that they viewed "a hybrid being the best of both worlds." An advantage of teaching an OL course, from the professors' point of view, is that, once the OL course is prepared, there is less weekly prep-work required when compared to preparing for a 3-hour FTF course each week, and, of course, the professors are not required to be in a certain place at a certain time to teach an OL course. In the OL course in this study, students were able to review the material as many times as necessary for them to understand it. In a FTF course, students may not have an opportunity to ask the teacher for clarification on certain course materials before the teacher moves on to another

subject, or perhaps some students may not wish to ask for clarification in front of their peers; in these cases, it is beneficial for the students to have materials posted OL—and would save the FTF teacher valuable class time. The FTF teacher would not need to repeatedly explain certain materials to those students who do not fully understand the material if the material were posted for them to review on the students' own time. However, the professors in the study claimed they really enjoy the interaction with the students in a FTF method of delivery, and that "intellectually, the OL course gets tired pretty fast." The professors both enjoy the "spontaneity" a FTF class environment can offer, as opposed to an OL version of a course which can become "so canned." They agreed a hybrid, or BL, course is the most attractive option since it "makes it the best of both." One professor remarked,

> Even if you had some FTF time—even an hour a week or an hour every other week or something—[students] get to know you; they can ask a bunch of questions and you can tell what level everybody is at. You can introduce assignments. Explain the steps FTF, and also have it available OL. Even the discussion—you can post it OL, but have the students come to class prepared to talk about it. It would save all the marking on the discussion board and it's more organic. More spontaneous.

## Student Questionnaire

Qualitative data collected from the student participants' questionnaires in this study were used to identify the participants' preferences regarding OL versus FTF classes. The information gathered helped to establish perceived differences in preference and efficacy when considering the educational experience of an OL versus a FTF class

from the student perspective. Of the 111 OL student participants, 71 (64%) completed the questionnaire. Of the 72 FTF student participants, 51 (71%) completed the questionnaire.

**Student Preference: OL Versus FTF**

Of the 71 OL participants who completed the questionnaire, 51 or 72% said they would still prefer to take the OL version of the Communications course. Of the 51 FTF participants who completed the questionnaire, 37 or 73% said they would still prefer to take the FTF version of the Communications course. These results are not too surprising since all students initially had the choice of whether to take the course OL or FTF, so perhaps through prior experience, the students knew their preferences for course facilitation style.

**FTF Student Participant Preferences**

Only three of the 51 FTF participant students who completed the questionnaire claimed they would have liked to take the OL version of the Communications course. Individual written explanations were given as follows (number of students indicated in parentheses) : (a) "I don't like the 8:00 a.m. time slot of the FTF class" (2); (b) "I would take the OL version if it doesn't have group work" (1). The first reason given is more physiological than pedagogical, and the second reason does not really apply since the OL and FTF courses in this study had identical assignments.

Eleven (or 22%) of the 51 FTF student participants who completed the survey claimed they would like to take a BL version of the Communications course. The students who commented on this claimed the following reasons:

1. "It's the best of both experiences" (1);
2. "I would save some money on commuting" (1);

3. “I wouldn’t learn as much if I took it OL; I need that interactive part of the learning experience” (1);
4. “Having some classes OL would be easier than getting up for an 8:00 a.m. class every week, but I am more motivated to get work done in class” (3);
5. “I could ask the teacher FTF questions, and work privately OL” (1).

The majority of the FTF student participants who completed the questionnaire, 37/51 students (73%) said they would prefer to stick with the FTF class experience. The following themes were identified through student comments:

1. Prefer personal interaction (13);
2. Need motivation to complete assignments on time (8);
3. Want to build rapport with professor (9);
4. Want to meet classmates (10);
5. Find it easier to ask questions (5);
6. Hear (or have previously experienced) negative things regarding OL classes (computer crashes, no social interaction) (3).

Interestingly, a small number of FTF students added comments like “Do not blend the course facilitation,” and “No OL element at all.” Since most courses offered at the college require some form of OL work, and most colleges are working toward blending many of their FTF course offerings, it may be useful to explore students’ perceptions of the OL work associated with their FTF courses. Some participants claimed to have “enough OL activities” in their other classes and that it is “too hard” to keep track of all the “other OL stuff,” so it is “nice” to have exclusively FTF classes.

It would be interesting to research student perceptions of OL versus FTF courses.

Some students believe that OL courses should be discounted because these students figure that OL courses are facilitated and assessed by computers, and not professors. These students do not seem to realize when it is actually their teacher marking their OL papers.

**OL Student Participant Preferences**

Ten out of 71 OL student participants (or 14%) who submitted the questionnaire said they would prefer taking the Communications course FTF as opposed to OL. Four of these participants' comments indicated the reason for wanting to take the FTF version of the course was because they thought the FTF version would be "less work" than the OL version of the course. One student wrote that it would be easier to communicate with classmates in person and that he would feel more motivated to do the coursework if he were to attend a FTF version instead of the OL version of the Communications course. One student said that she would prefer to meet the teacher FTF instead of just OL. The two remaining students that left comments justifying their preference to take a FTF rather than an OL Communications course said that they would prefer to take the course FTF "depending on the intensity of the workload." This seems congruent with some other students' perceptions that the FTF course is "less work" than the OL course. The assignments in the FTF and the OL courses were identical in this study. Perhaps students viewed having to log in to the OL course to access course notes, PowerPoints, and video clips as active "work"—as opposed to the more passive learning that can happen in a FTF classroom setting.

One hundred percent of OL students who indicated in the questionnaire that they preferred to stay with the OL method of delivery said they preferred to take the

Communications course OL for scheduling reasons and for convenience. Fourteen per cent (14%) of OL student participants said that they would prefer taking a BL course rather than an OL course. Only a few students wrote comments to back up this preference: (a) “I would like verbal and visual teaching. Being at home with distractions of kids and family, I need a classroom setting to focus”; (b) “I like the OL element since I need to travel a fair distance to get to the college, but I would like to meet my professor and fellow students.”

Such comments seem to be in agreement with those from the FTF students who claim that BL classes may be the “best of both worlds,” allowing students to meet their classmates and professors and also enjoy some of the time and space freedom that OL courses have to offer.

## CHAPTER SIX: SUMMARY, CONSIDERATIONS, RECOMMENDATIONS

Though the quantitative data collected in this study suggest there is no significant difference overall when considering gain scores and final grades between courses taught FTF and OL, the qualitative data suggest there are important differences when it comes to preference of facilitation style. Ultimately, it can be posited from the quantitative element of this study that the instructional delivery approaches are of equal value when examining learning outcomes, gain scores, and final grades of the same course taught OL and FTF; however, it is also relevant from the qualitative standpoint that students and facilitators should be given a choice whether or not to partake in an OL or FTF teaching and learning environment. The skill of the teacher in the particular mode he or she uses is also a key factor in shaping learning satisfaction on the part of students. Learning to teach well OL may be good practice for making anyone a better teacher. FTF teachers moving to an OL environment may struggle more than OL teachers moving to a FTF environment.

Future research might gauge student perceptions of OL teaching and learning and to see whether students would value one method of facilitation over another. One of the most prominent laments made by students of OL classes is the lack of FTF interaction with the facilitator and with fellow students. It may be prudent for institutions of higher education to keep this in mind and perhaps offer more BL style courses rather than exclusively OL offerings for a course.

It is also important to gauge professors' perceptions of OL teaching and learning and to carefully monitor psychological and physical fatigue due to the nature of OL course delivery and marking as well as teacher burn-out—is teacher burn-out more prevalent in OL-facilitated courses than in FTF courses? This likely depends on the

nature of the course. An OL course in which essay-style assignments are most prevalent will be more work to facilitate, whereas an OL course whose assessments are all multiple-choice would be considerably less (or virtually no) work to facilitate.

A significant difference was found in the gain scores between males taking the FTF versus the OL Communications course, between females and males taking the FTF version of the course, and in the gain scores between females taking the FTF versus the OL version of the Communications course. It may be interesting to further explore these differences to see if, in fact, females do significantly better in FTF classes than do males, and to see if males do significantly better in OL classes than they do in FTF classes. A recent study has explored the possibility that males are more successful in OL courses than they are in FTF classes, and that females are more successful in FTF classes than in OL classes; Patrick Tiernery's (2013) "Keeping the Boys at a Distance: An Alternate Path to Post-Secondary Education" addresses this phenomenon. Perhaps gender differences should be considered when creating curriculum in higher education.

## Considerations and Recommendations

Institutions of higher education need to continue to research student and faculty preferences when it comes to OL-facilitated courses. Newer facilitation styles are not always better, and students may not see the value in attending a FTF institution whose courses are largely OL. More research is needed to determine the most effective facilitation style to benefit student retention, the most palatable facilitation style to recruit new students, and the best facilitation style to suit individual courses within programs in higher education.

In this study, participating students were from more than 40 different programs

(see Appendix C). It may be beneficial to investigate which programs' courses are most conducive to OL learning methods, and if the students in those programs would prefer taking their courses OL, FTF, or as BL deliveries. Further research carefully examining each discipline's needs and instructional delivery-style preferences may be beneficial for future best practices.

Institutions of higher education should further investigate the age and gender differences and respective course facilitation preferences of their students, and continue to look at differentiated instruction that is age and/or gender based.

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# Appendix A

## Assessment Rubric

**Language Studies Rubric Student: Grade _____ / 24 = _____ %**

| Category | 1<br>Unacceptable | 2<br>Weak | 3<br>Unsatisfactory | 4<br>Adequate | 5<br>Strong | 6<br>Exemplary |
|---|---|---|---|---|---|---|
| **Content** | • No argument/ statement of purpose<br>• Few or no topic sentences<br>• Few or no explanations<br>• Little or no evidence<br>• No introduction and/or conclusion | • Incoherent argument/ statement of purpose<br>• Incoherent topic sentences<br>• Confused explanations of little relevance to topic sentences<br>• Poorly chosen evidence<br>• Poor introduction and conclusion | • Weak argument/ statement of purpose<br>• Incomplete/ illogical topic sentences<br>• Inadequate explanations of some relevance to topic sentences<br>• Weak evidence Insufficient introduction and conclusion | • Adequate argument/ statement of purpose<br>• Adequate topic sentences<br>• Adequate explanations somewhat relevant to topic sentences<br>• Adequate evidence<br>• Sufficient introduction and conclusion | • Strong argument/ statement of purpose<br>• Strong topic sentences<br>• Detailed explanations relevant to topic sentences<br>• Well chosen evidence that supports claims<br>• Effective introduction and conclusion | • Compelling argument/ statement of purpose<br>• Convincing topic sentences<br>• Sound and specific explanations that fully support topic sentences<br>• Skillfully chosen evidence that strengthens claims<br>• Comprehensive and convincing introduction and conclusion |
| **Organization** | • No sequence of ideas<br>• Little or no paragraph structure<br>• No transitions | • Illogical sequence of ideas<br>• Illogical paragraph structure<br>• Unsuccessful transitions | • Weak sequence of ideas<br>• Disjointed paragraph structure<br>• Few transitions | • Traceable paragraph sequence<br>• Adequate paragraph structure<br>• Some effective transitions within and between paragraphs | • Logical paragraph sequence<br>• Reasonably coherent paragraph structure<br>• Mostly effective transitions within and between paragraphs | • Skillfully ordered paragraph sequence<br>• Fully coherent paragraph structure<br>• Natural and effective transitions within and between paragraphs |
| **Style** | • Extremely wordy<br>• Few or no complete sentences<br>• Highly inappropriate choice of tone and vocabulary; no consideration of audience/ purpose | • Very wordy<br>• Poorly constructed sentences<br>• Inappropriate choice of tone and vocabulary; no consideration of audience/ purpose | • Wordy<br>• Some well constructed simple sentences<br>• Inconsistent choice of tone and vocabulary; lack of consideration of audience/ purpose | • Somewhat concise<br>• Some well-constructed sentences with somewhat varied structure<br>• Acceptable choice of tone and vocabulary; some consideration of audience/purpose | • Usually concise<br>• Usually well-constructed sentences with varied structure<br>• Good choice of tone and vocabulary; well suited to audience/ purpose | • Consistently concise<br>• Well constructed sentences with varied structure<br>• Skilful choice of tone and vocabulary; well suited to audience/ purpose |

*Continued*

| Category | 1<br>Unacceptable | 2<br>Weak | 3<br>Unsatisfactory | 4<br>Adequate | 5<br>Strong | 6<br>Exemplary |
|---|---|---|---|---|---|---|
| **Grammar and Mechanics** | • Knowledge of fundamentals of grammar, mechanics, and spelling is not evident | • Knowledge of fundamentals of grammar, mechanics, and spelling is extremely limited | • At least two of the following types of errors are frequent:<br>– mechanical errors<br>– sentence fragments<br>– run-on sentences<br>– subject verb agreement<br>– verb tense or form errors | • Two of the following types of errors are occasional:<br>– mechanical errors<br>– sentence fragments<br>– run-on sentences<br>– subject verb agreement<br>– verb tense or form errors | • Competent control of grammar, mechanics and spelling; minor errors could be easily corrected with proofreading | • Mastery of grammar, mechanics and spelling |

**Comments:**

## Appendix B

## Questionnaire

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**Comparison of Learning Outcomes Between an In-Class and Online Course**

**I. DEMOGRAPHICS**

1. Please specify your age and gender:

Age: _____

Gender: _____

2. Please indicate whether you took Communications (course code deleted) in-class or online:

In-class: _____

Online: _____

**II. TEACHING AND LEARNING EFFECTIVENESS**

Using the following 1 – 5 scale based on (name deleted) College's questionnaire ***Student Feedback on Teaching and Learning Effectiveness***, please indicate, by circling the most correct response, the degree to which you agree with the statements listed below:

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| strongly disagree | disagree | neutral | agree | strongly agree |

1 2 3 4 5 3. Concepts and ideas related to the course were clearly presented.

1 2 3 4 5 4. Opportunities for active participation (group work, discussion, hands-on learning, etc) were presented.

1 2 3 4 5 5. The professor treated me with respect.

| | |
|---|---|
| 1 2 3 4 5 | 6. The professor was accessible outside of class (by appointment, email, etc). |
| 1 2 3 4 5 | 7. I was encouraged to express opinions and ask questions. |
| 1 2 3 4 5 | 8. Learning activities presented in the course (lecture, discussion, case study, demonstration, etc.) helped me to learn. |
| 1 2 3 4 5 | 9. 'Real life' examples that were connected to the course content were demonstrated in the course. |
| 1 2 3 4 5 | 10. The professor responded to my questions and comments in ways that helped me learn |

**III. SHORT ANSWER QUESTIONS**

Based on Stephen D. Brookfield's ***Critical Incident Questionnaire***, please answer the following questions to the best of your ability:

11. At what point in the course did you feel most engaged with what was happening?

12. At what point in the course were you most distanced from what was happening?

13. What action that anyone (teacher or student) took this semester did you find most affirming or helpful?

14. What action that anyone took this semester did you find most puzzling or confusing?

15. What about the class this semester surprised you the most? (This could be about your own reactions to what went on, something that someone did, or anything else that occurred.)

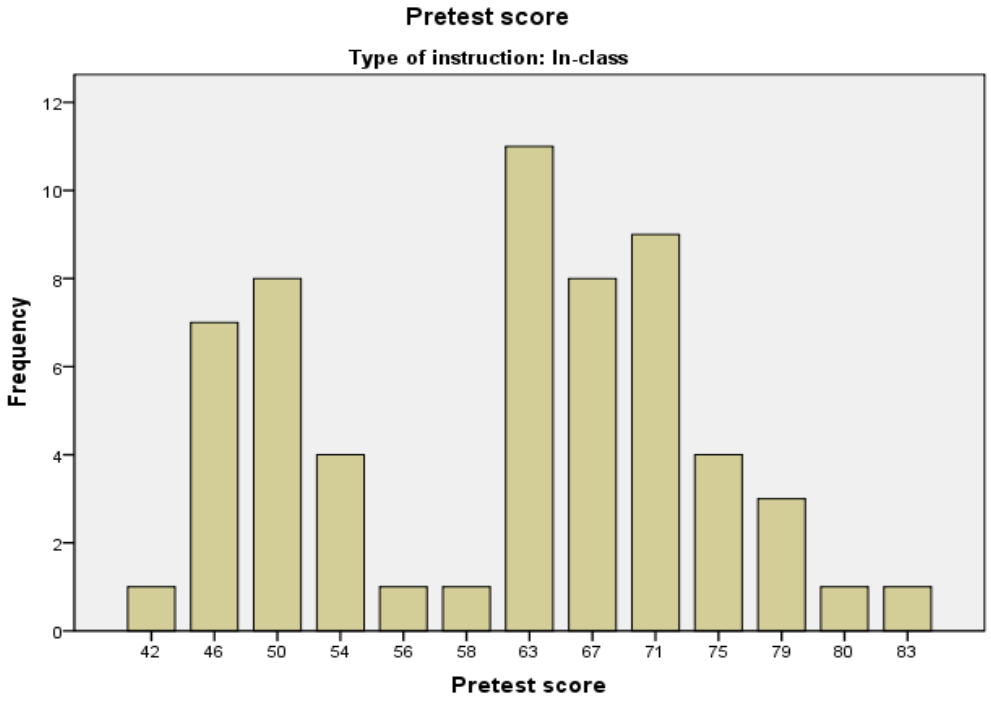
16. If you were to take another Communications course, would you prefer to take it in-class, online, or as a blended (half in-class and half online) course?

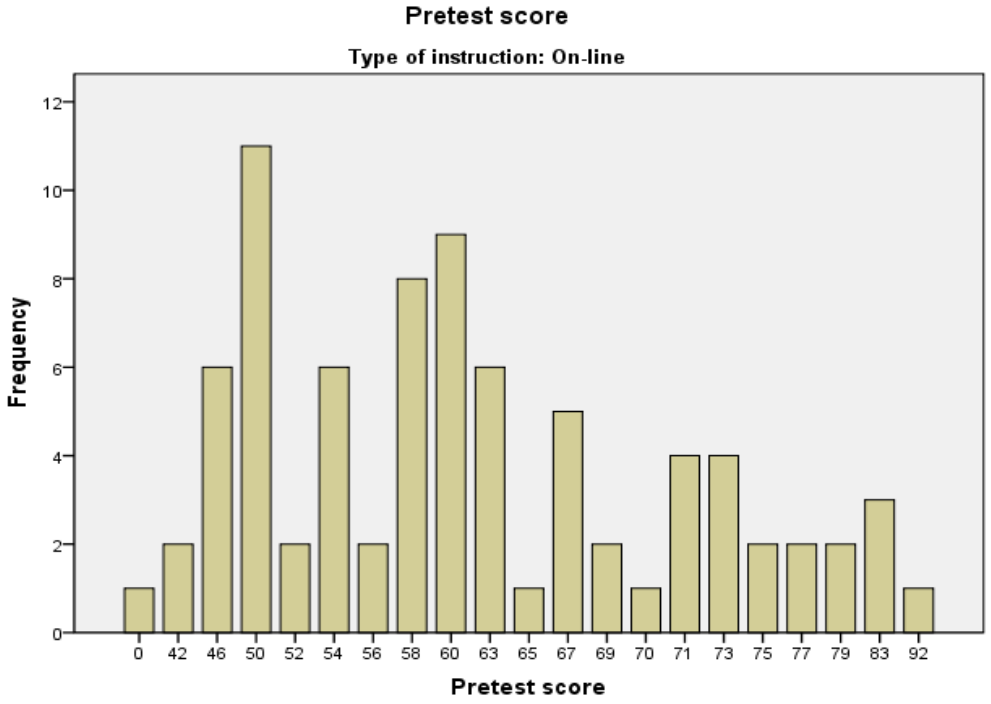
17. Please explain your choice. (If you chose a different style of facilitation from the Communications class you just finished, please explain the reason for the change in your preference.):

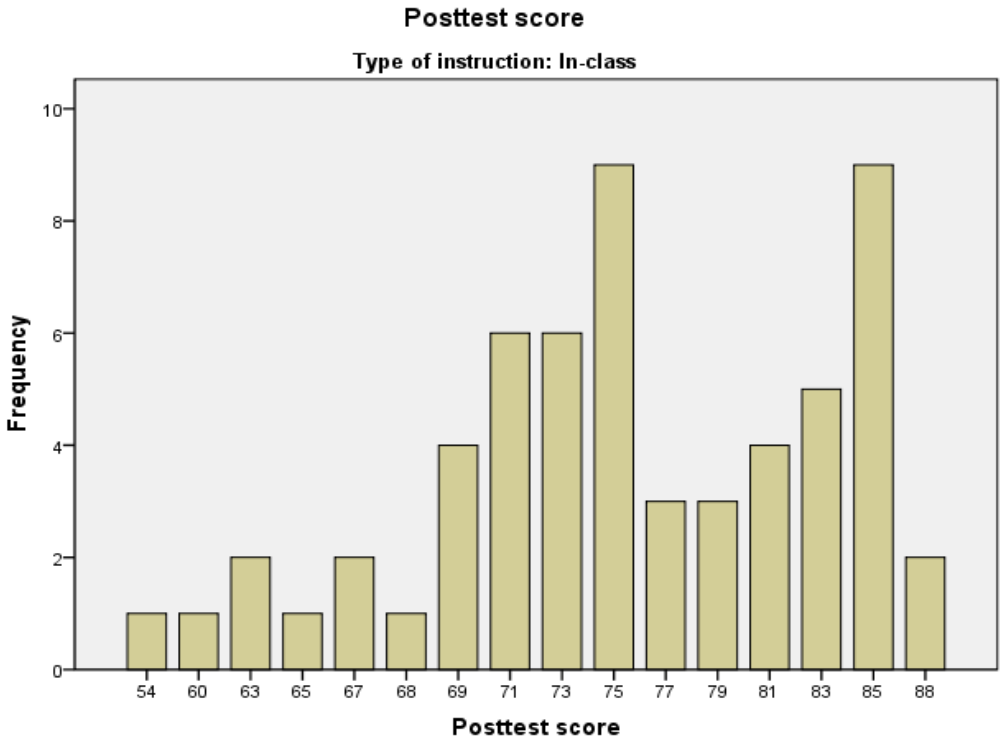
18. Do you have any other comments or suggestions for course improvement?

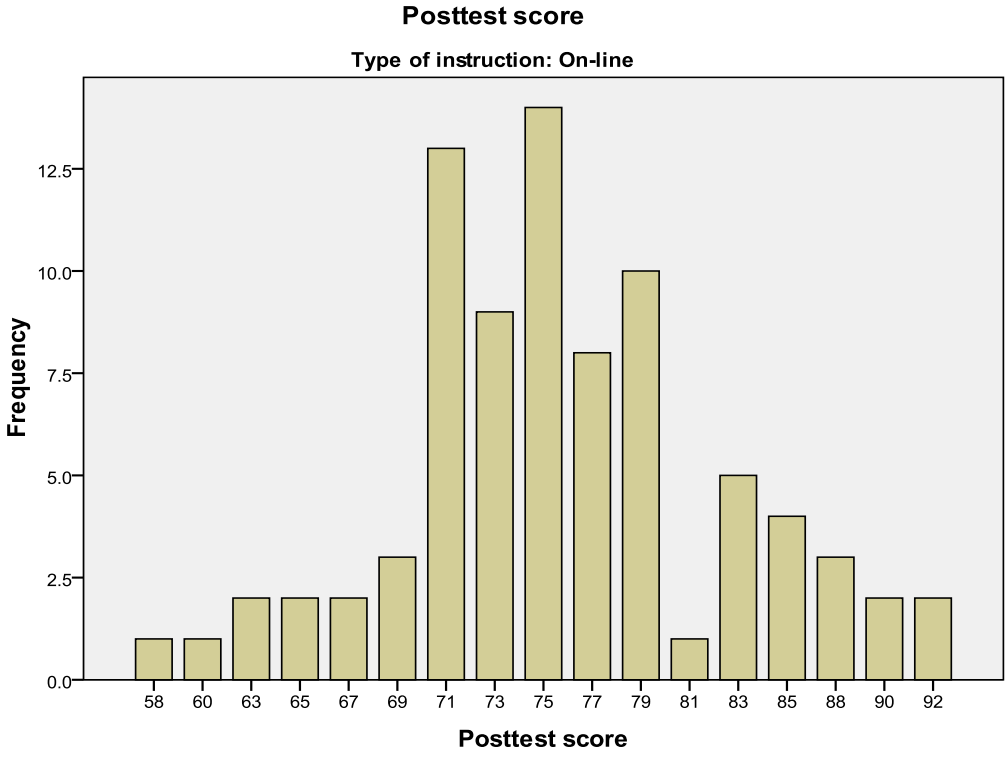
# Appendix C

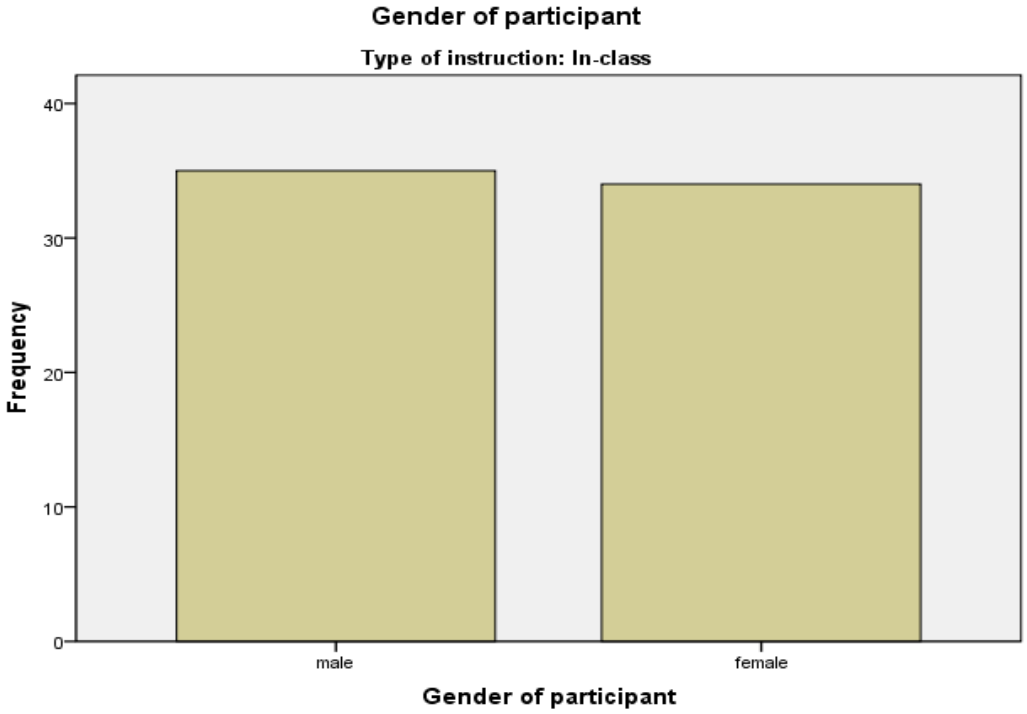
## Quantitative Results: Bar Graphs

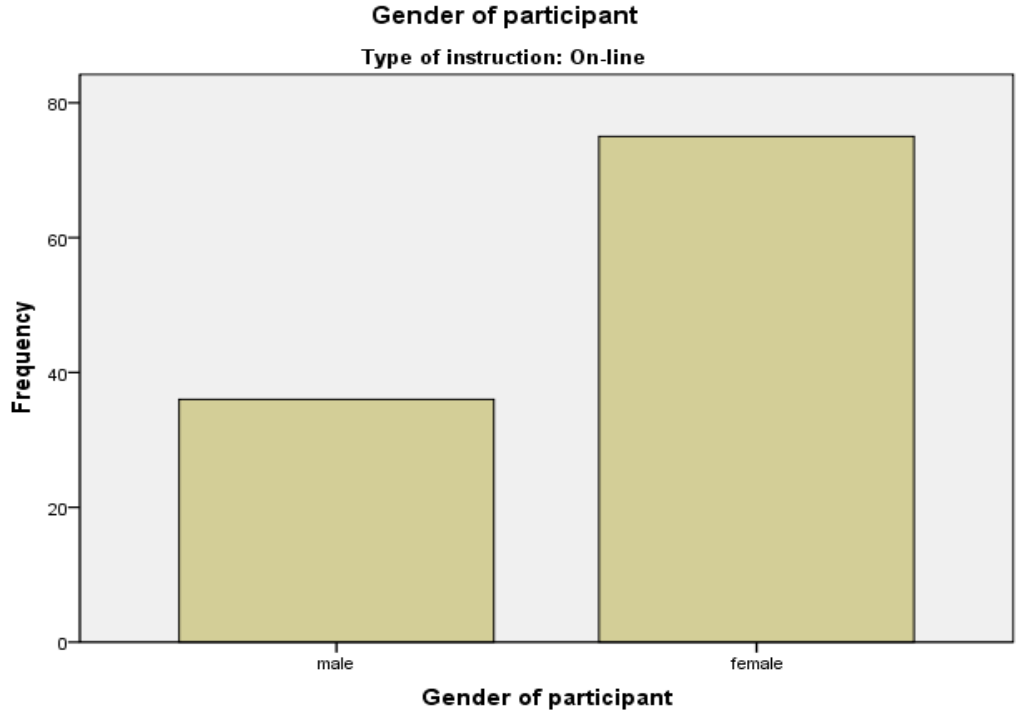


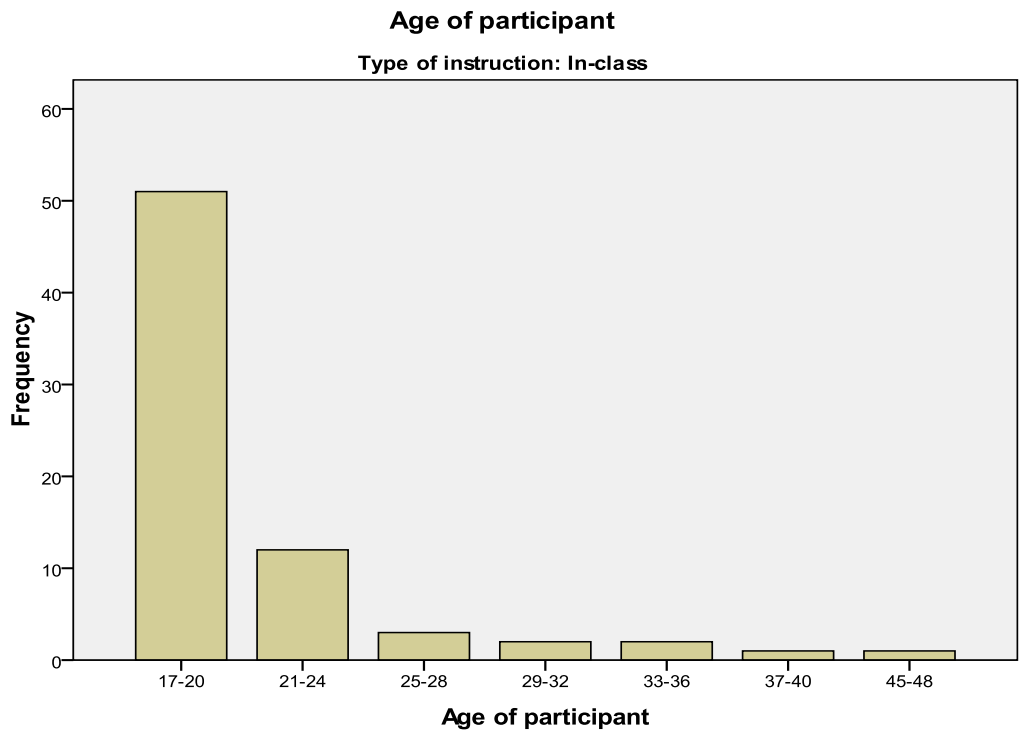



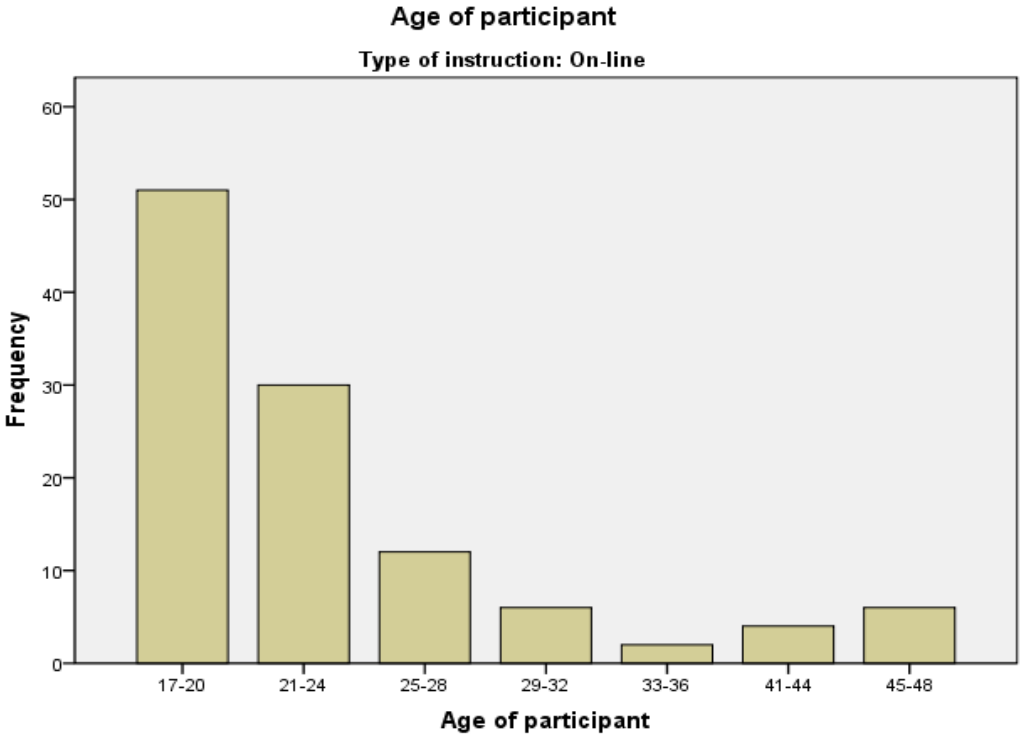

Posttest score
Type of instruction: In-class
Frequency
10
8
6
4
2
0
54 60 63 65 67 68 69 71 73 75 77 79 81 83 85 88
Posttest score

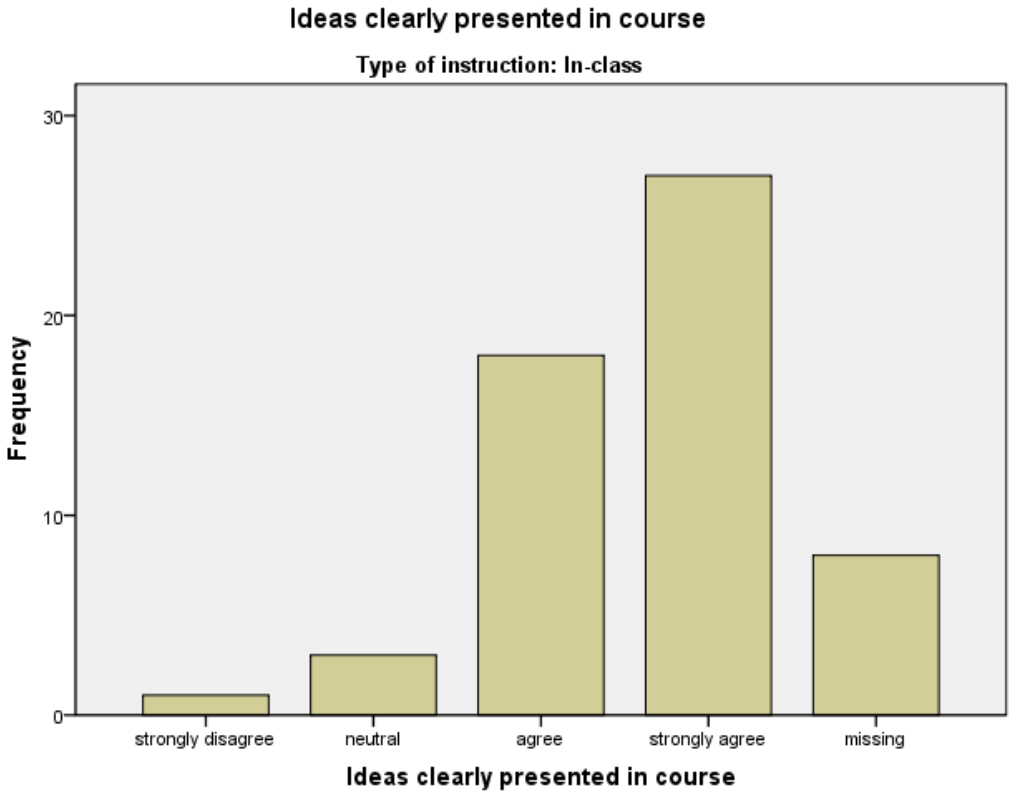

Posttest score
Type of instruction: On-line
Frequency
12.5
10.0
7.5
5.0
2.5
0.0
58 60 63 65 67 69 71 73 75 77 79 81 83 85 88 90 92
Posttest score

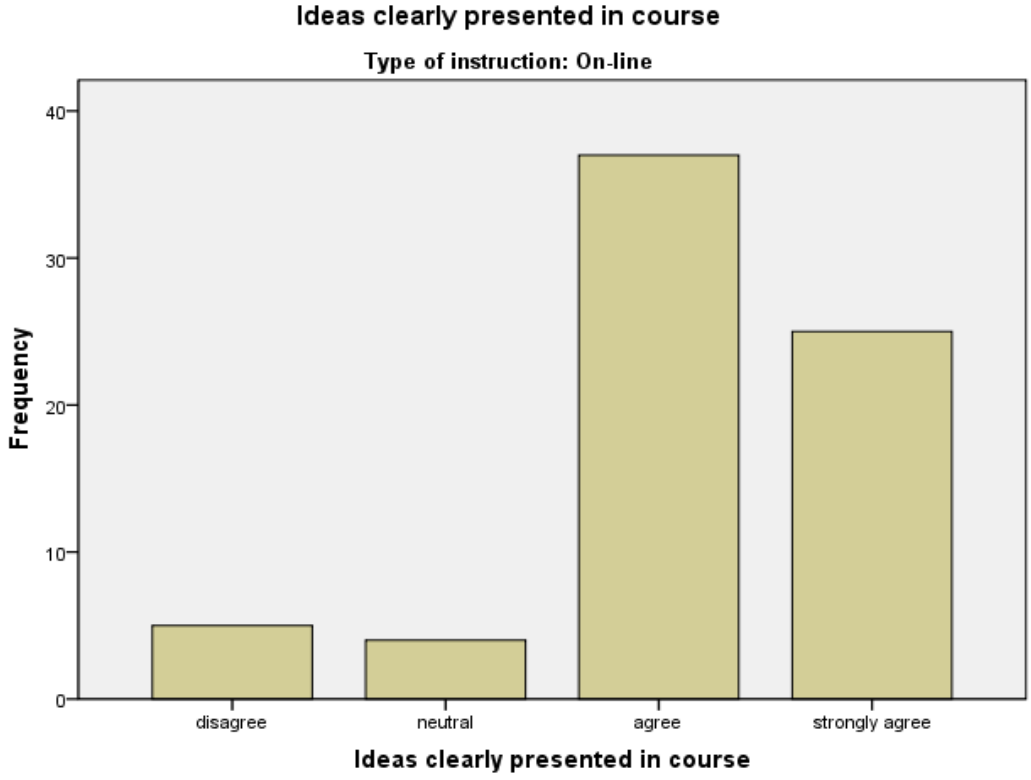

Gender of participant
Type of instruction: In-class
Frequency
40
30
20
10
0
male
female
Gender of participant

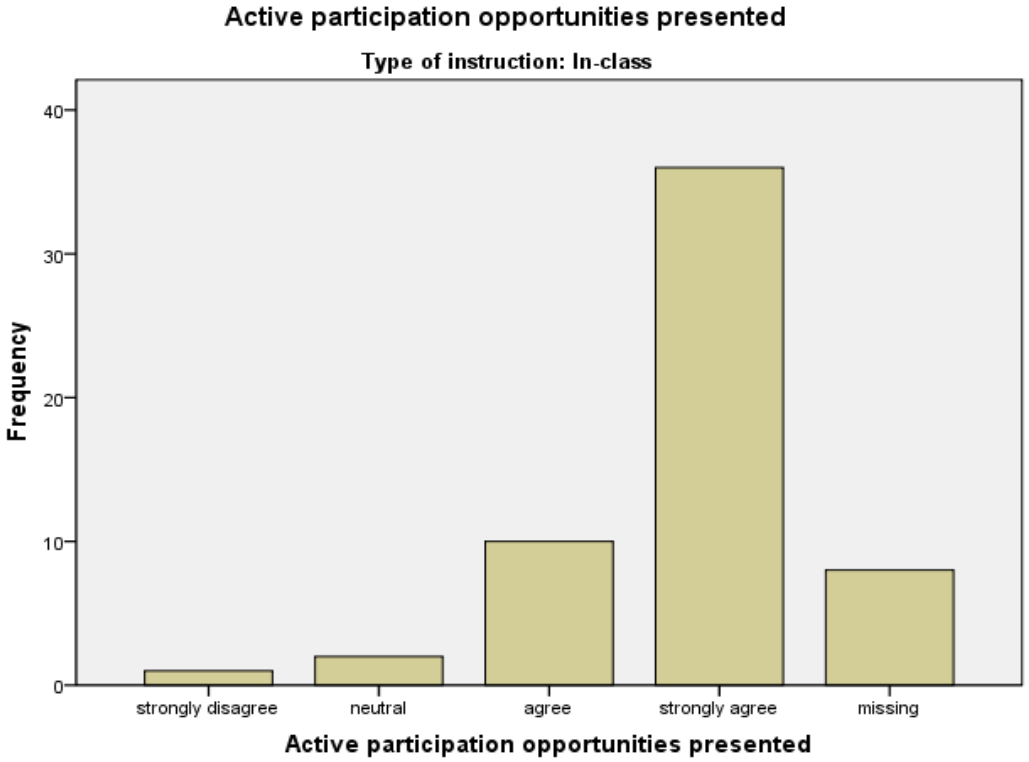

Gender of participant
Type of instruction: On-line
Frequency
80
60
40
20
0
male
female
Gender of participant

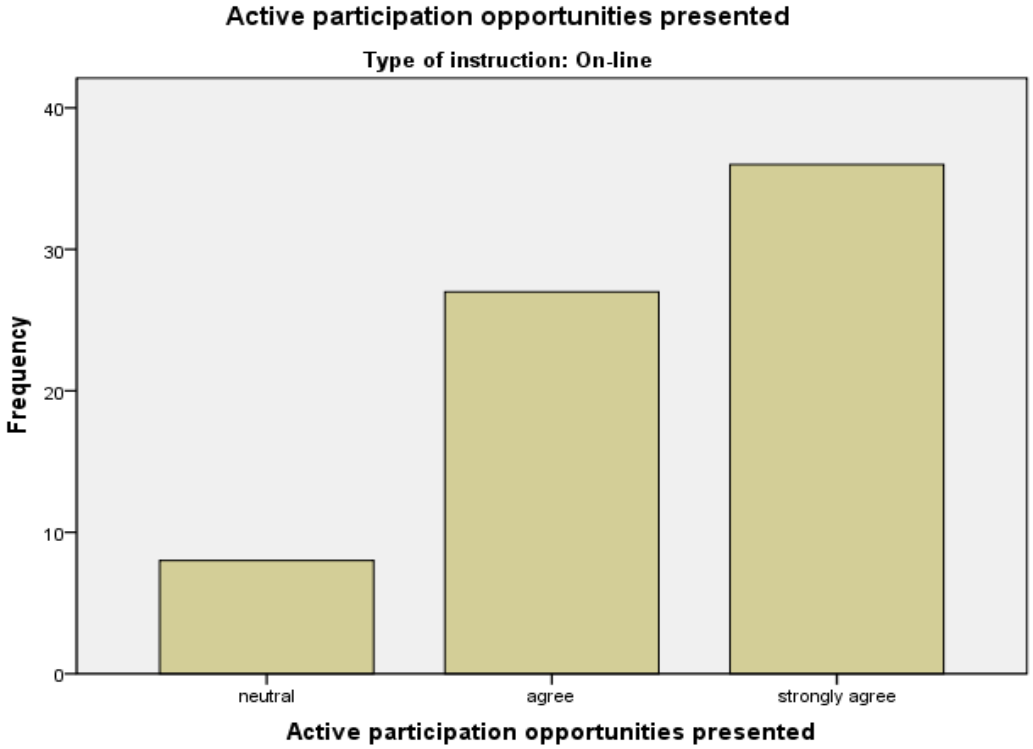

Age of participant
Type of instruction: In-class
Frequency
60
50
40
30
20
10
0
17-20
21-24
25-28
29-32
33-36
37-40
45-48
Age of participant

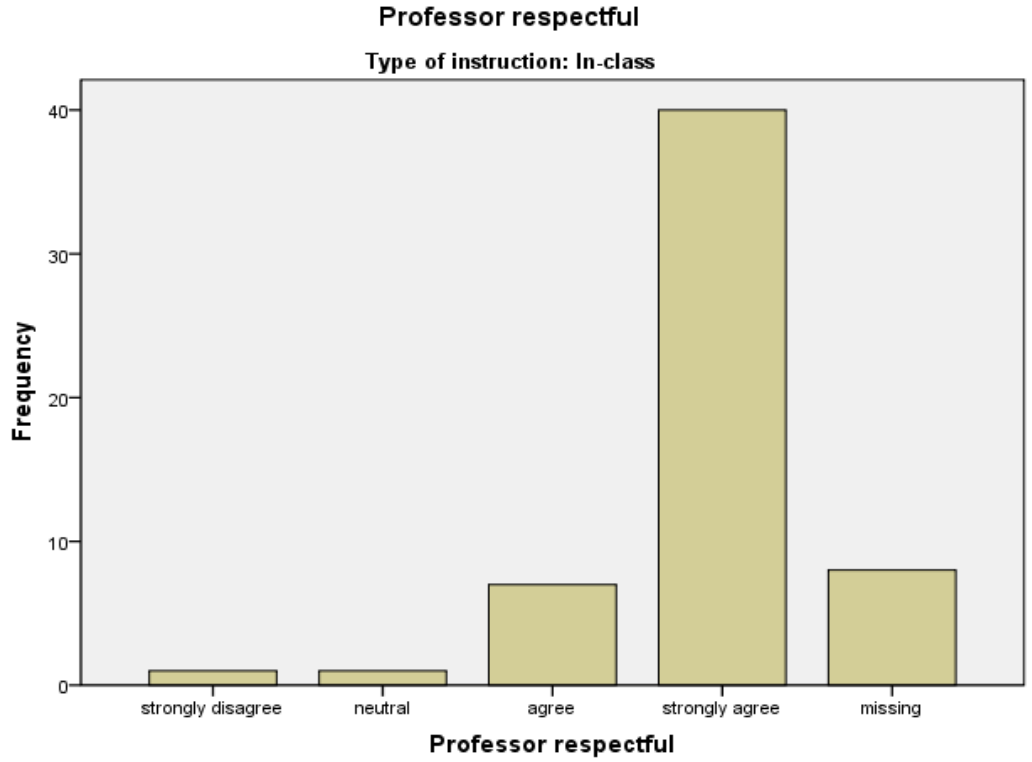

Age of participant
Type of instruction: On-line
Frequency
60
50
40
30
20
10
0
17-20
21-24
25-28
29-32
33-36
41-44
45-48
Age of participant

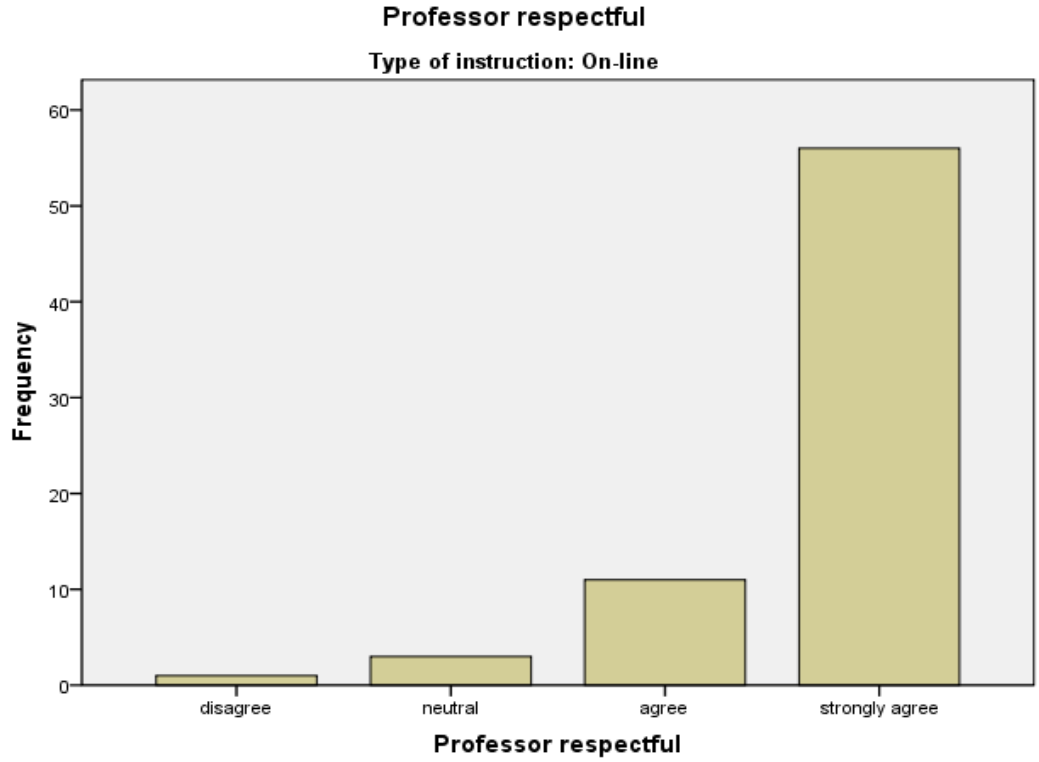

Ideas clearly presented in course
Type of instruction: In-class
Frequency
30
20
10
0
strongly disagree
neutral
agree
strongly agree
missing
Ideas clearly presented in course

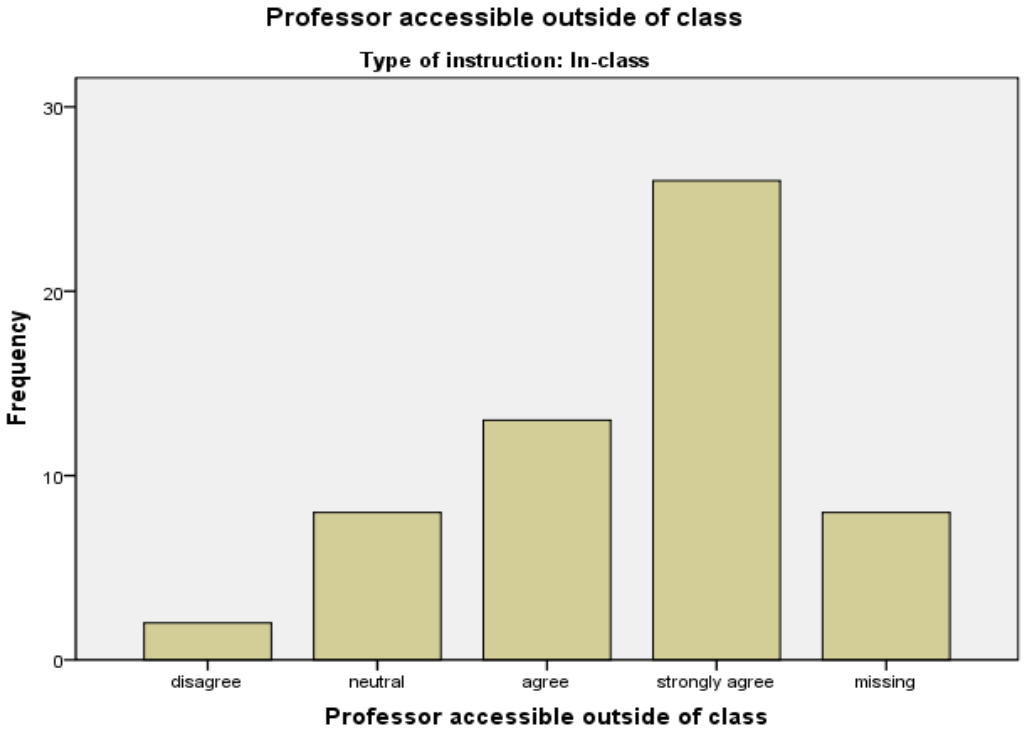

Ideas clearly presented in course
Type of instruction: On-line
Frequency
40
30
20
10
0
disagree
neutral
agree
strongly agree
Ideas clearly presented in course

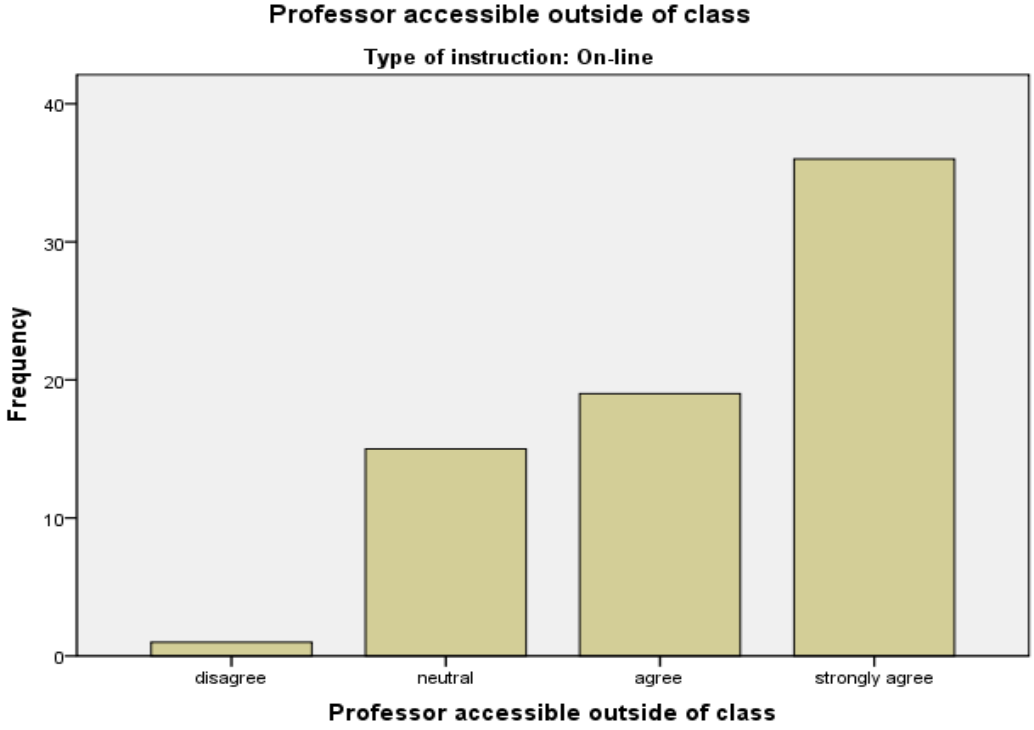

Active participation opportunities presented
Type of instruction: In-class
Frequency
40
30
20
10
0
strongly disagree
neutral
agree
strongly agree
missing
Active participation opportunities presented

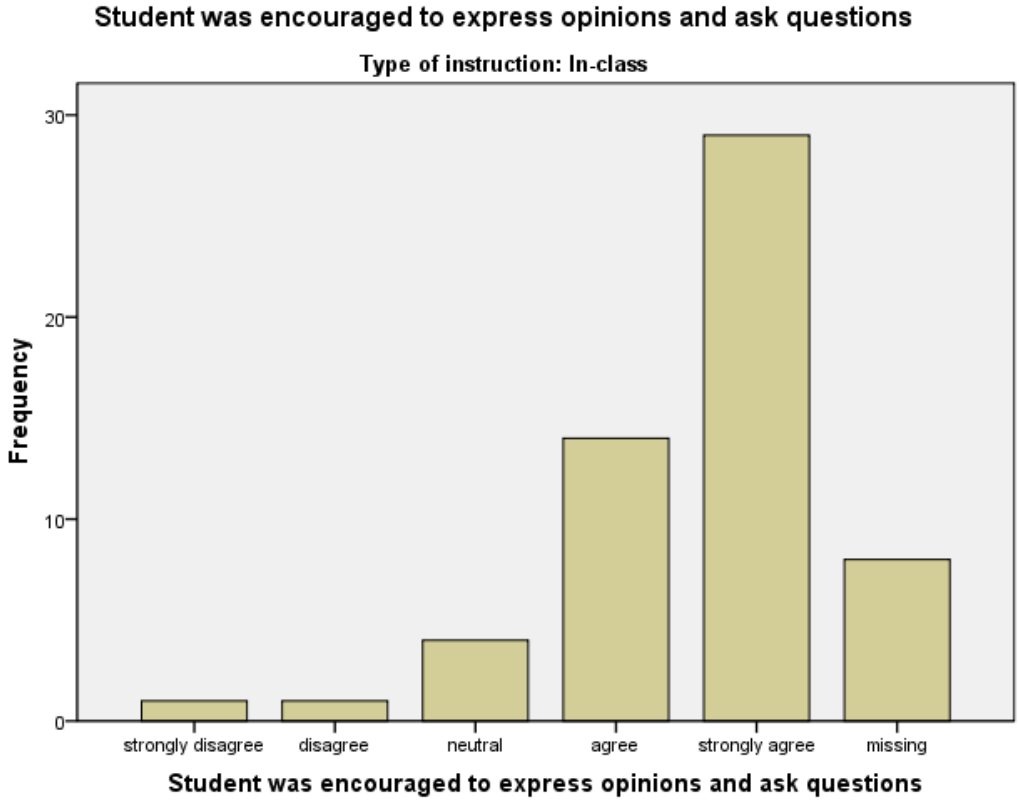

Active participation opportunities presented
Type of instruction: On-line
Frequency
40
30
20
10
0
neutral
agree
strongly agree
Active participation opportunities presented

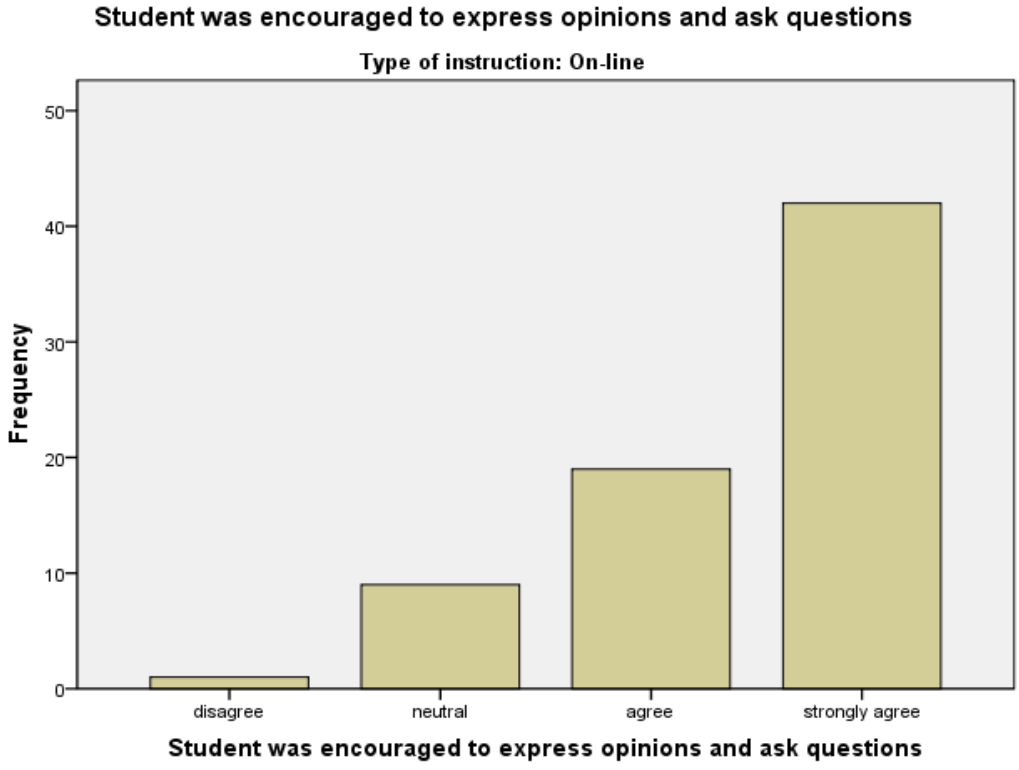

Professor respectful
Type of instruction: In-class
Frequency
40
30
20
10
0
strongly disagree
neutral
agree
strongly agree
missing
Professor respectful

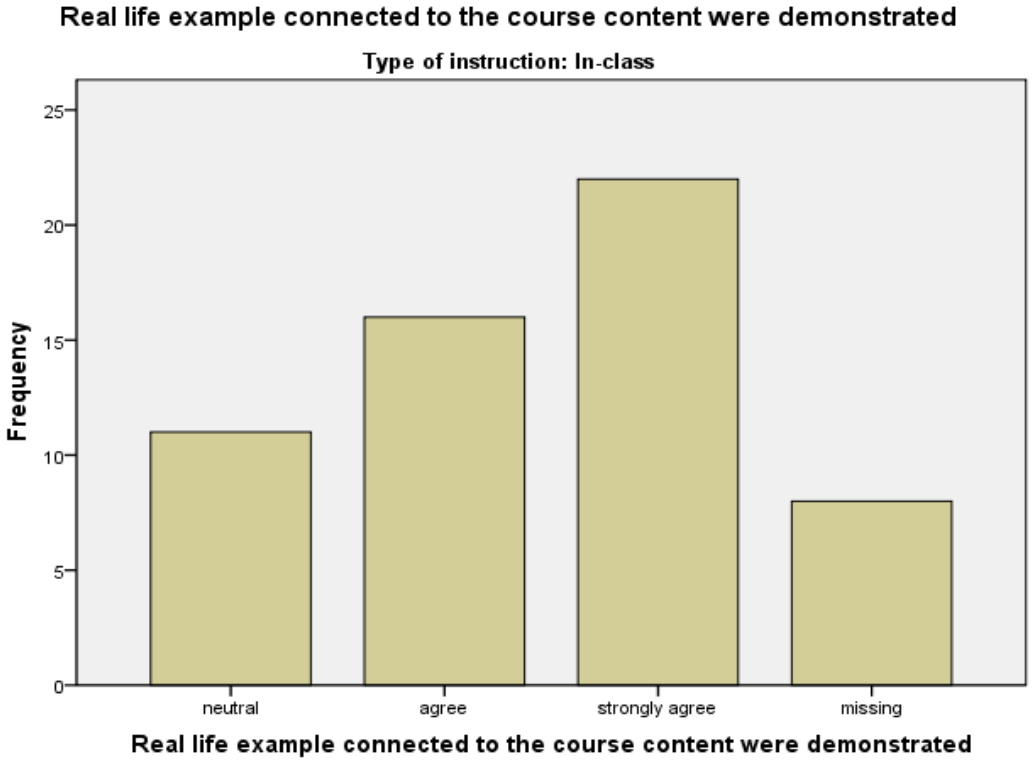

Professor respectful
Type of instruction: On-line
Frequency
60
50
40
30
20
10
0
disagree
neutral
agree
strongly agree
Professor respectful

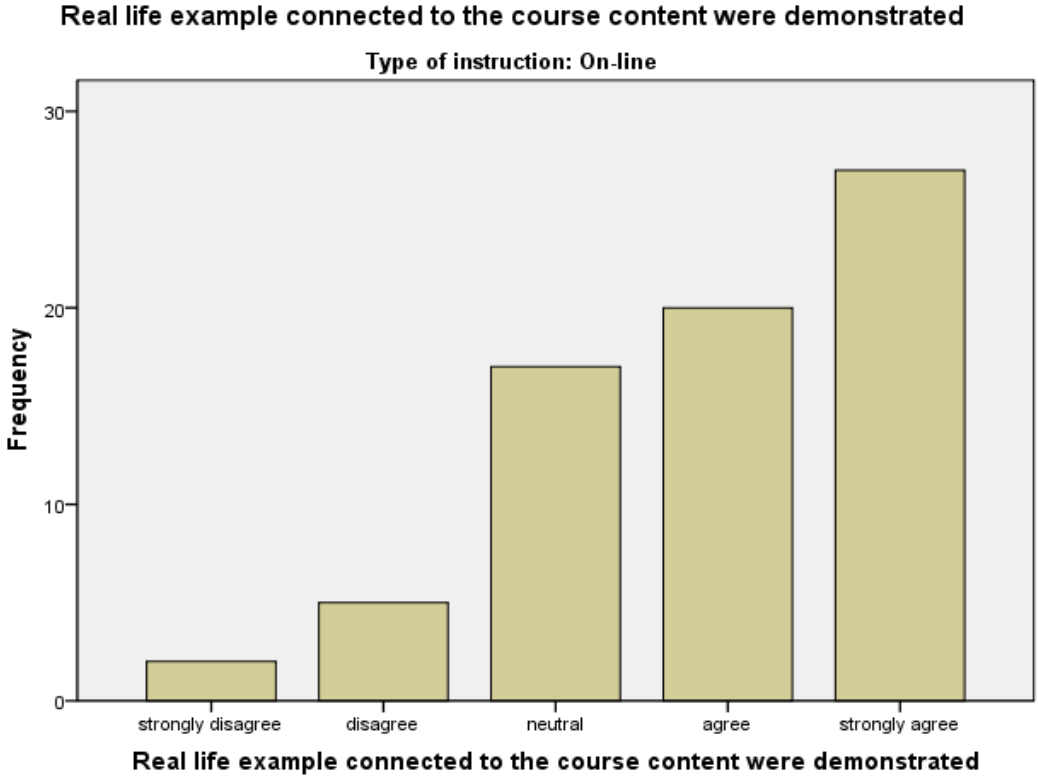

Professor accessible outside of class
Type of instruction: In-class
Frequency
30
20
10
0
disagree
neutral
agree
strongly agree
missing
Professor accessible outside of class

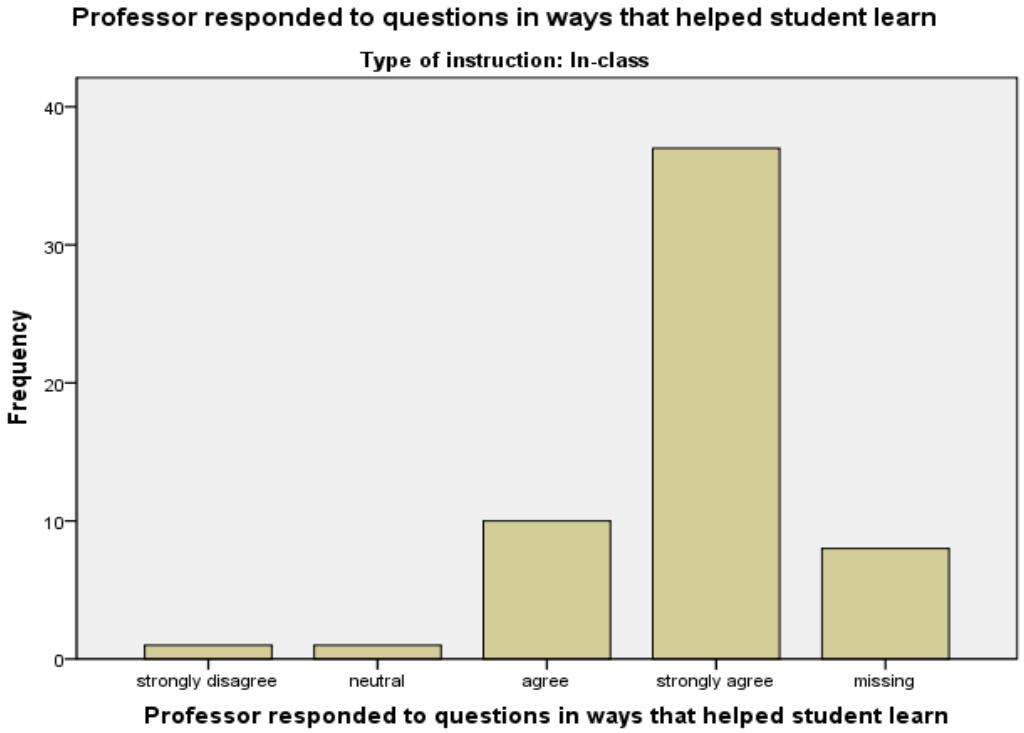

Professor accessible outside of class
Type of instruction: On-line
Frequency
40
30
20
10
0
disagree
neutral
agree
strongly agree
Professor accessible outside of class

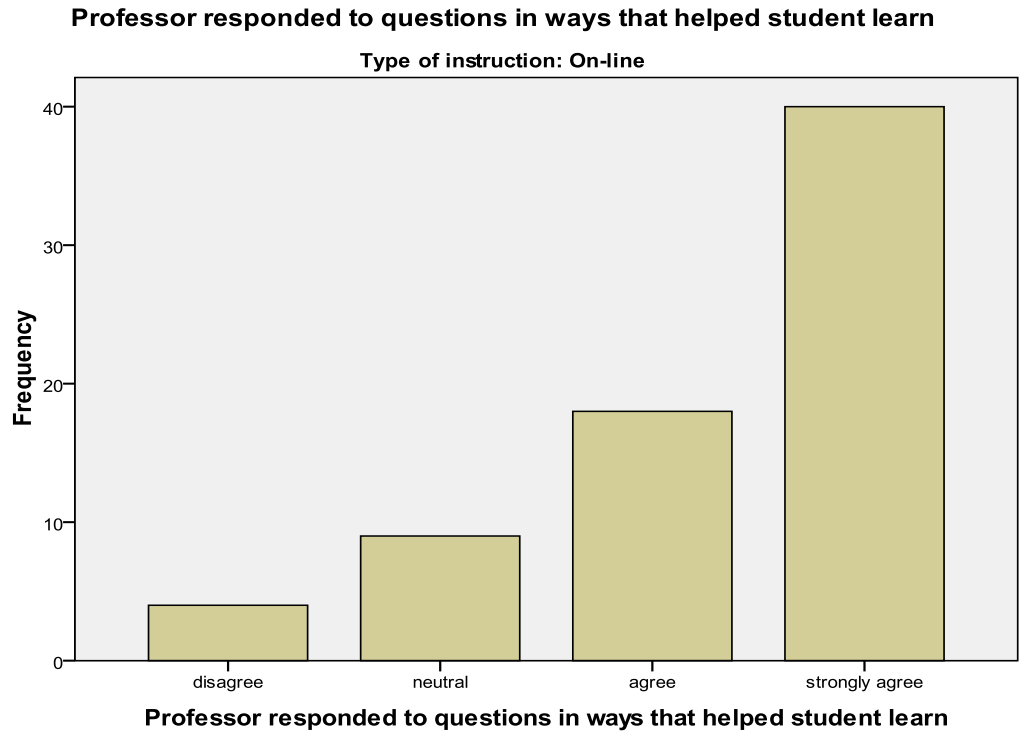

Student was encouraged to express opinions and ask questions
Type of instruction: In-class
Frequency
30
20
10
0
strongly disagree
disagree
neutral
agree
strongly agree
missing
Student was encouraged to express opinions and ask questions

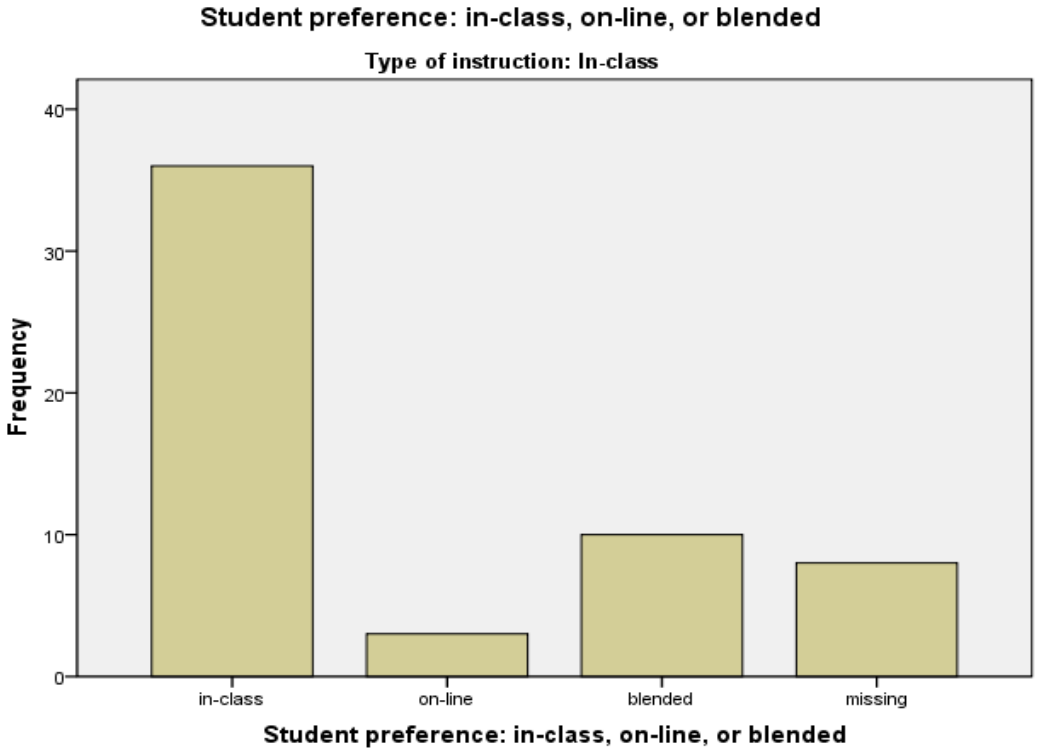

Student was encouraged to express opinions and ask questions
Type of instruction: On-line
Frequency
50
40
30
20
10
0
disagree
neutral
agree
strongly agree
Student was encouraged to express opinions and ask questions

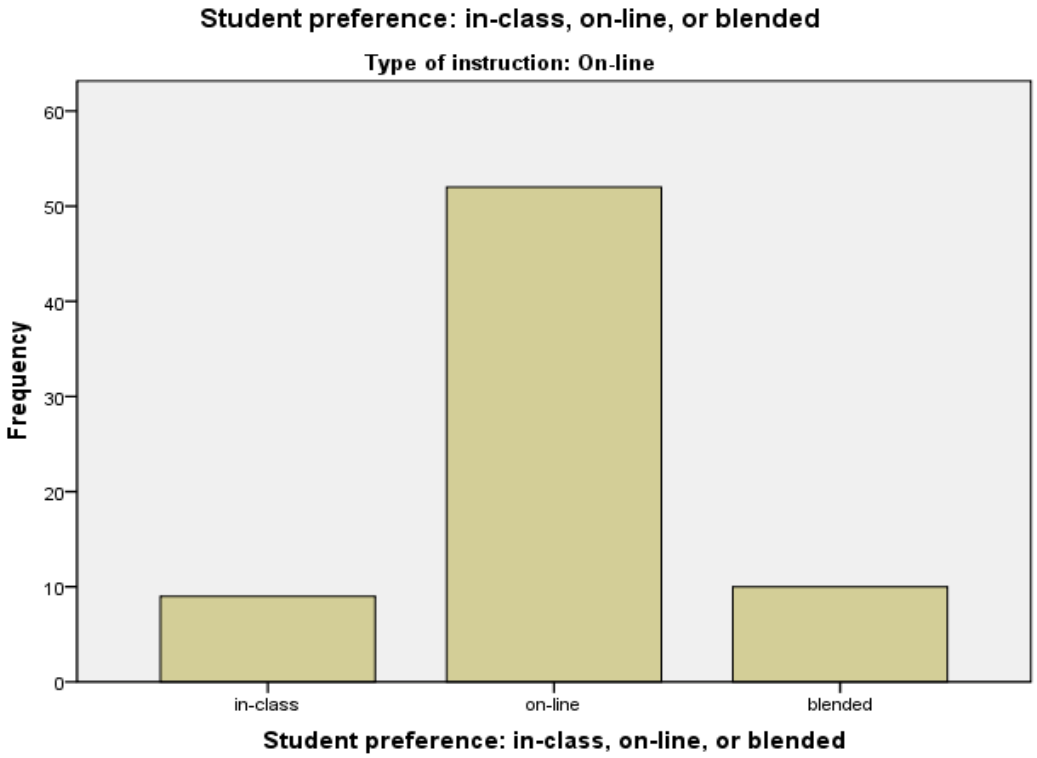

Real life example connected to the course content were demonstrated
Type of instruction: In-class
Frequency
25
20
15
10
5
0
neutral
agree
strongly agree
missing
Real life example connected to the course content were demonstrated

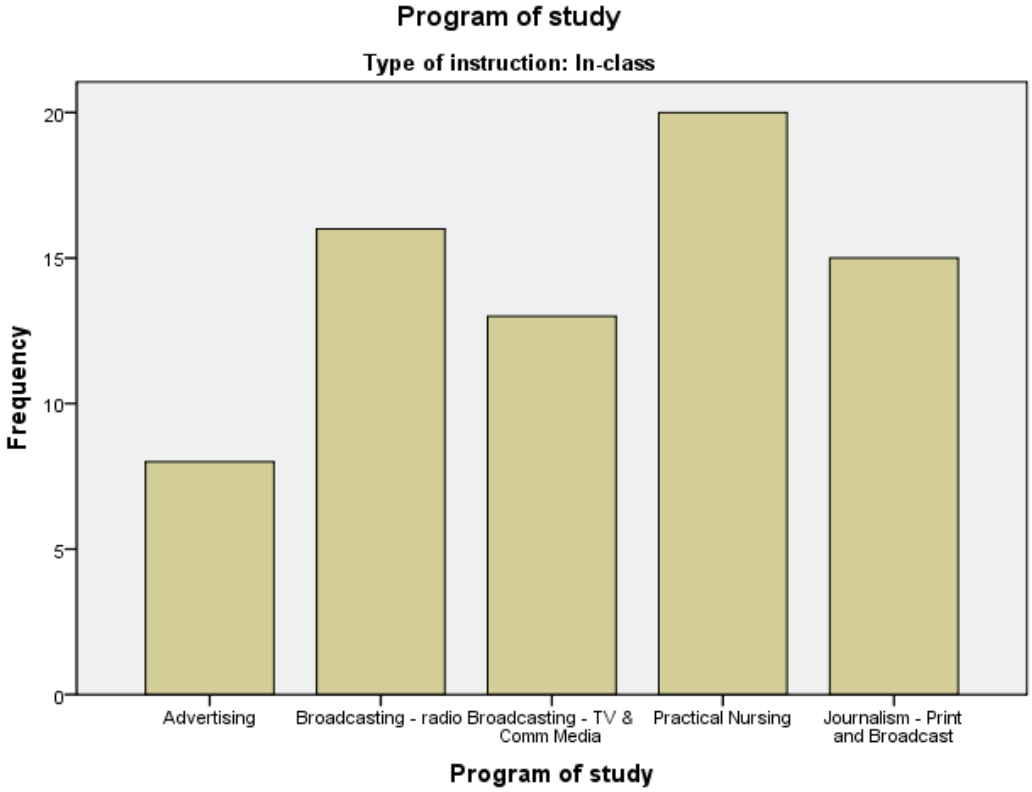

Real life example connected to the course content were demonstrated
Type of instruction: On-line
Frequency
30
20
10
0
strongly disagree
disagree
neutral
agree
strongly agree
Real life example connected to the course content were demonstrated

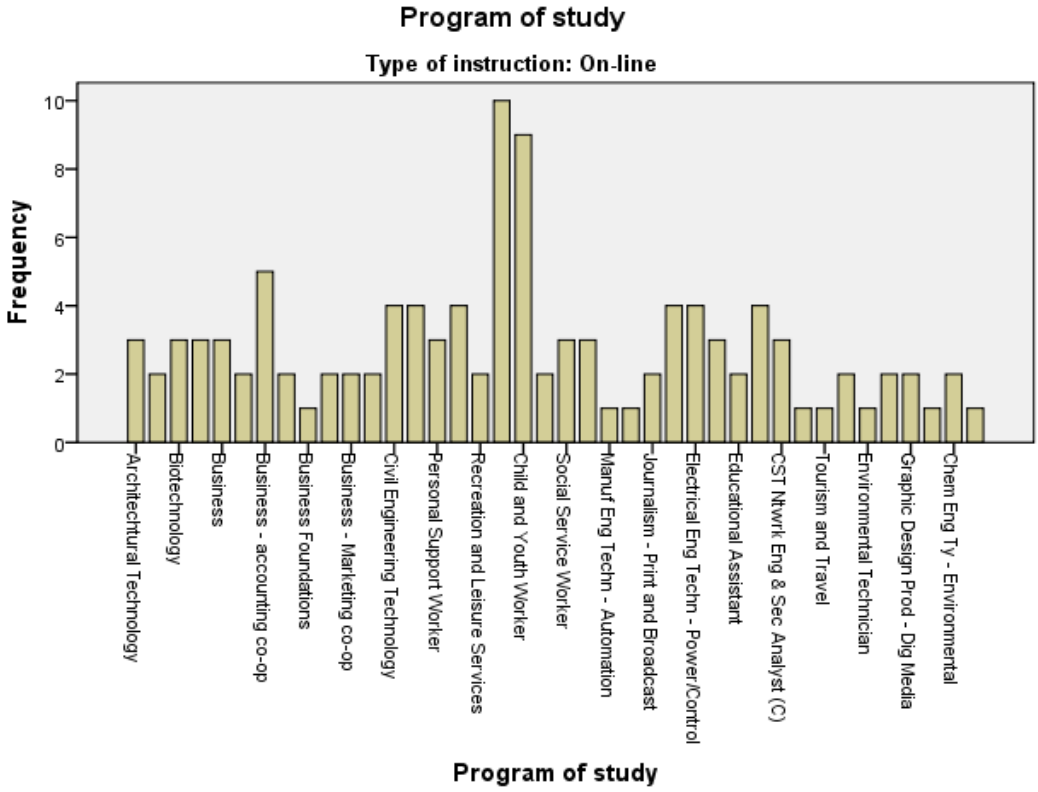

Professor responded to questions in ways that helped student learn
Type of instruction: In-class
Frequency
40
30
20
10
0
strongly disagree
neutral
agree
strongly agree
missing
Professor responded to questions in ways that helped student learn


Professor responded to questions in ways that helped student learn
Type of instruction: On-line
Frequency
40
30
20
10
0
disagree
neutral
agree
strongly agree
Professor responded to questions in ways that helped student learn


Student preference: in-class, on-line, or blended
Type of instruction: In-class
Frequency
40
30
20
10
0
in-class
on-line
blended
missing
Student preference: in-class, on-line, or blended


Student preference: in-class, on-line, or blended
Type of instruction: On-line
Frequency
60
50
40
30
20
10
0
in-class
on-line
blended
Student preference: in-class, on-line, or blended


Program of study
Type of instruction: In-class
Frequency
20
15
10
5
0
Advertising
Broadcasting - radio
Broadcasting - TV & Comm Media
Practical Nursing
Journalism - Print and Broadcast
Program of study


Program of study
Type of instruction: On-line
Frequency
10
8
6
4
2
0
Architechtural Technology
Biotechnology
Business
Business - accounting co-op
Business Foundations
Business - Marketing co-op
Civil Engineering Technology
Personal Support Worker
Recreation and Leisure Services
Child and Youth Worker
Social Service Worker
Manuf Eng Techn - Automation
Journalism - Print and Broadcast
Electrical Eng Techn - Power/Control
Educational Assistant
CST Ntwrk Eng & Sec Analyst (C)
Tourism and Travel
Environmental Technician
Graphic Design Prod - Dig Media
Chem Eng Ty - Environmental
Program of study